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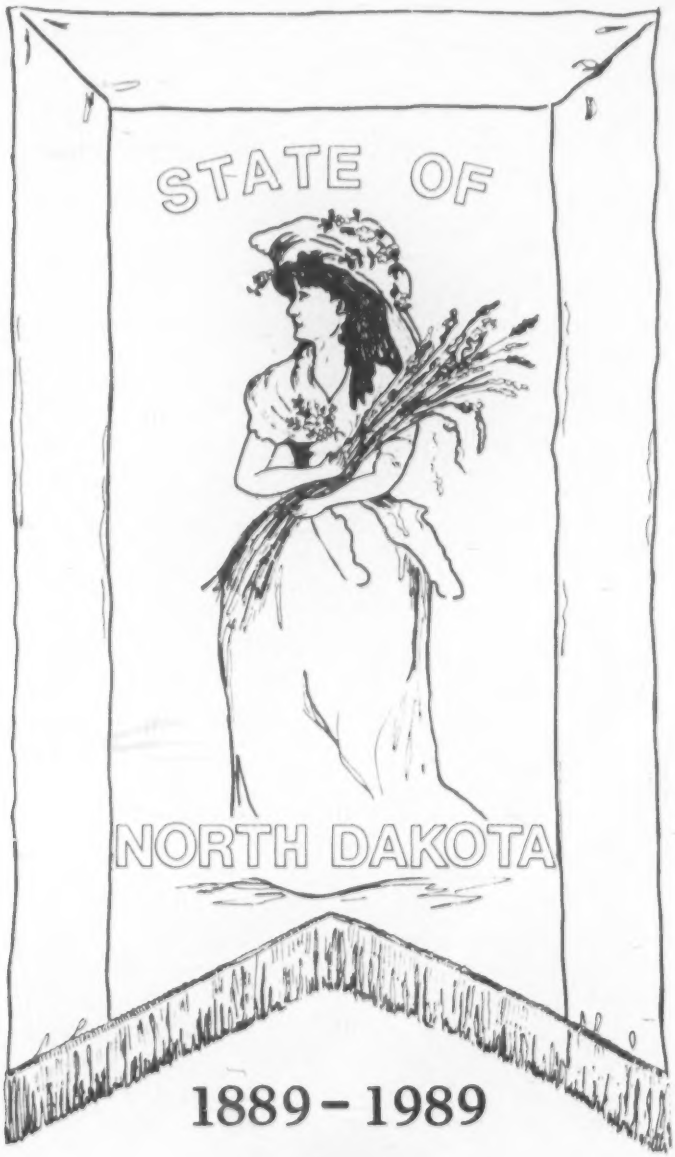
1988
NORTH DAKOTA
VITAL STATISTICS REPORT



North Dakota State Department of Health and Consolidated Laboratories

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Introduction

The 1988 edition of the North Dakota Vital Statistics Report is a statistical summary of births, deaths, fetal deaths, marriages, divorces and annulments, and induced terminations of pregnancy. The summary's major purpose is to present information which can be utilized as a basis for health policy and planning decisions and as a primer for epidemiologic investigation.

Although a majority of the information contained in this report pertain to events occurring in 1988, some data for prior years has been included to illustrate trends.

Data for this summary are gleaned from the certificates of live birth, death, fetal death, induced termination of pregnancy, marriage and divorce, and annulment.

Any comments or suggestions concerning the content or format for this report are welcome, and any subsequent data needs should be directed to the North Dakota State Department of Health and Consolidated Laboratories, Administrative Services Section, Second Floor, Judicial Wing, State Capitol, 600 East Boulevard Avenue, Bismarck, North Dakota 58505-0200, (701) 224-2392.

Definitions, Rates, and Ratios

Definitions

BIRTH WEIGHT - Weight of infant or fetus at time of delivery (normally recorded in pounds and ounces and/or grams).

FETAL DEATH - Death prior to the complete expulsion or extraction from its mother of a product of conception, having passed through at least the 20th week of gestation; the fetus shows no signs of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

GESTATIONAL PERIOD - Number of weeks elapsed between the first day of the last menstrual period and date of delivery.

HEBDOMADAL DEATH - Death occurring to an individual less than seven days of age.

INDUCED TERMINATION OF PREGNANCY - The termination of human pregnancy with an intention other than to produce a live birth or to remove a dead embryo or fetus.

INFANT DEATH - Death occurring to an individual less than one year of age.

LEADING CAUSES OF DEATH - Deaths are grouped into categories dependent upon the underlying cause of death. Ranks are assigned by organizing these categories according to the number of deaths in each category from most frequent to least.

LIVE BIRTH - The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy. which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

LOW WEIGHT BIRTH - Birth wherein the birth weight is equivalent to 2,500 grams or less (approximately 5 lbs., 8 oz.).

MATERNAL DEATHS - Those deaths wherein the physician has designated a maternal condition as the underlying cause of death.

MEAN - The average of a set of values, equal to the sum of the values divided by the number of values.

MEDIAN - The central value of a distribution of values wherein the same percentage of observations are above this point as are below.

NEONATAL DEATH - Death occurring to individuals less than 28 days of age.

OCCURRENCE - Place where the event actually occurred.

OUT-OF-WEDLOCK BIRTH - Birth occurring to a mother who is not married at the time of conception, at the time of birth, or at any time between conception and birth.

PERINATAL DEATH - Fetal death and deaths less than 28 days of age.

PERINATE - Fetus or newborn during the perinatal period (from the end of the 20th week of gestation to the 28th day after birth).

RACE - Race for mother, father, or decedent is as stated on particular certificate. Race of child is determined from the race of the parents.

RESIDENCE - Usual place of residence for person to whom event occurred. For births and fetal deaths residence is defined as the mother's usual place of residence.

TOTAL BIRTHS - Live births and fetal deaths.

UNDERLYING CAUSE OF DEATH - That condition giving rise to the chain of events leading to death.

Rates and Ratios

CAUSE-SPECIFIC DEATH RATE - Number of deaths due to a specific cause divided by the total resident population X 100,000.

CRUDE BIRTH RATE - Number of resident live births divided by the total resident population X 1,000.

CRUDE DEATH RATE - Number of resident deaths divided by the total resident population X 1,000.

DIVORCE RATE - Number of divorces and annulments divided by the total resident population X 1,000.

FETAL DEATH RATE - Number of resident fetal deaths divided by the total resident live births and resident fetal deaths X 1,000.

FETAL DEATH RATIO - Number of resident fetal deaths divided by the total resident live births X 1,000.

INFANT MORTALITY RATE - Number of infant deaths divided by the total resident live births X 1,000.

LOW WEIGHT BIRTH RATIO - Number of low weight births divided by the total resident live births X 1,000.

MARRIAGE RATE - Number of marriages divided by the total resident population X 1,000.

MATERNAL DEATH RATE - Number of maternal deaths divided by the total resident live births X 10,000

NEONATAL DEATH RATE - Number of neonatal deaths divided by the total resident live births X 1,000.

NO PRENATAL CARE RATIO - Number of live births to mothers with no prenatal care divided by the total resident live births X 1,000.

OUT-OF-WEDLOCK RATIO - Number of resident out-of-wedlock live births divided by total resident live births X 1,000.

PERINATAL DEATH RATE - Number of perinatal deaths divided by the total resident live births and the total resident fetal deaths X 1,000.

Reliability of Rates

Precautions should be taken in drawing specific inferences from comparisons of rates for different geographic areas or different periods of time. Rates based on a small number of events or for a small geographic area tend to exhibit considerable variation from time period to time period or place to place. Excessive variation in rates not only negates their utility as estimators of the probability of an event occurring, but also their usefulness for comparative purposes. In addition, the reader should recognize the limitations of using unadjusted rates in attempting to attribute rate differences to particular factors. For example, the reader should not attempt to state that there was a significant difference in rates for two geographic areas for diseases of the heart without first adjusting the rates to negate the effects of differing age distributions in the two areas. Many times there are simply not sufficient data available to adequately adjust rates for all possible compounding factors. For this reason, the reader should exercise diligence and caution while attempting to draw substantive conclusions when comparing vital statistics rates.

Qualifications and Limitations of Data and Calculations

COMPARABILITY IN CAUSE-OF-DEATH STATISTICS

The reader must bear in mind two major limitations in interpreting changes in cause-of-death statistics. Changes in nomenclature and the classification scheme (The International Classification of Diseases) and changes in diagnostic practices may seriously affect the comparability of such statistics over time. The International Classification of Diseases is modified approximately once every ten years to reflect changing medical opinion and practice. More accuracy may be obtained when comparing cause-of-death certificates which are coded via one revision of the International Classification of Diseases and utilizing the coding practices and procedures in effect at that time.

In order to compare cause-of-death statistics from one revision to the next it is necessary to apply a ratio of comparability. Such ratios are developed by comparing the number of deaths assigned to a certain condition or group of conditions under one revision to the number assigned under another revision of the International Classification of Diseases.

NATALITY

Natality:
An Overview 1988

Total Resident Live Births	10,111
Crude Birth Rate	15.2
Median Live Birth Weight (Grams)	3,461
Low Weight Live Births	487
Low Weight Birth Ratio	48.2

Live Births

Between 1960 and 1988 the number of North Dakota resident live births varied considerably (Figure 1.1 and Table 1.1). The smallest number of resident live births recorded since 1960 was 9,738 in 1973, while the largest number occurred in 1960, a year in which 16,690 resident live births were reported. During the same time period crude birth rates also varied considerably (Figure 1.2 and Table 1.1). The largest crude birth rate was experienced in 1960 (26.4), while the smallest corresponding rate was reported in 1988 (15.2).

Figure 1.1
Resident Live Births
North Dakota, 1960-1988

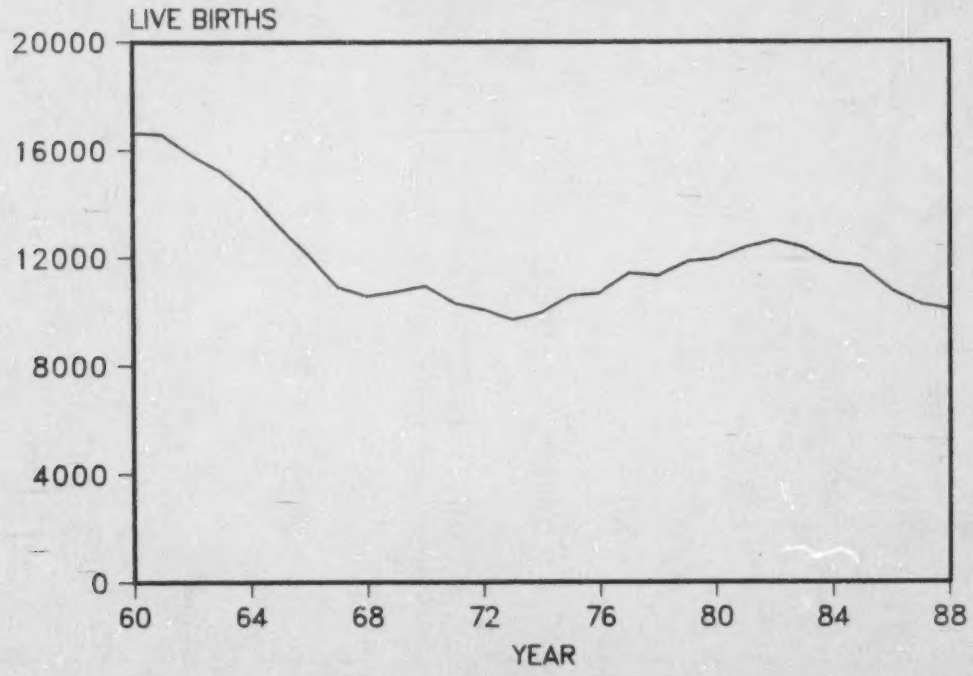


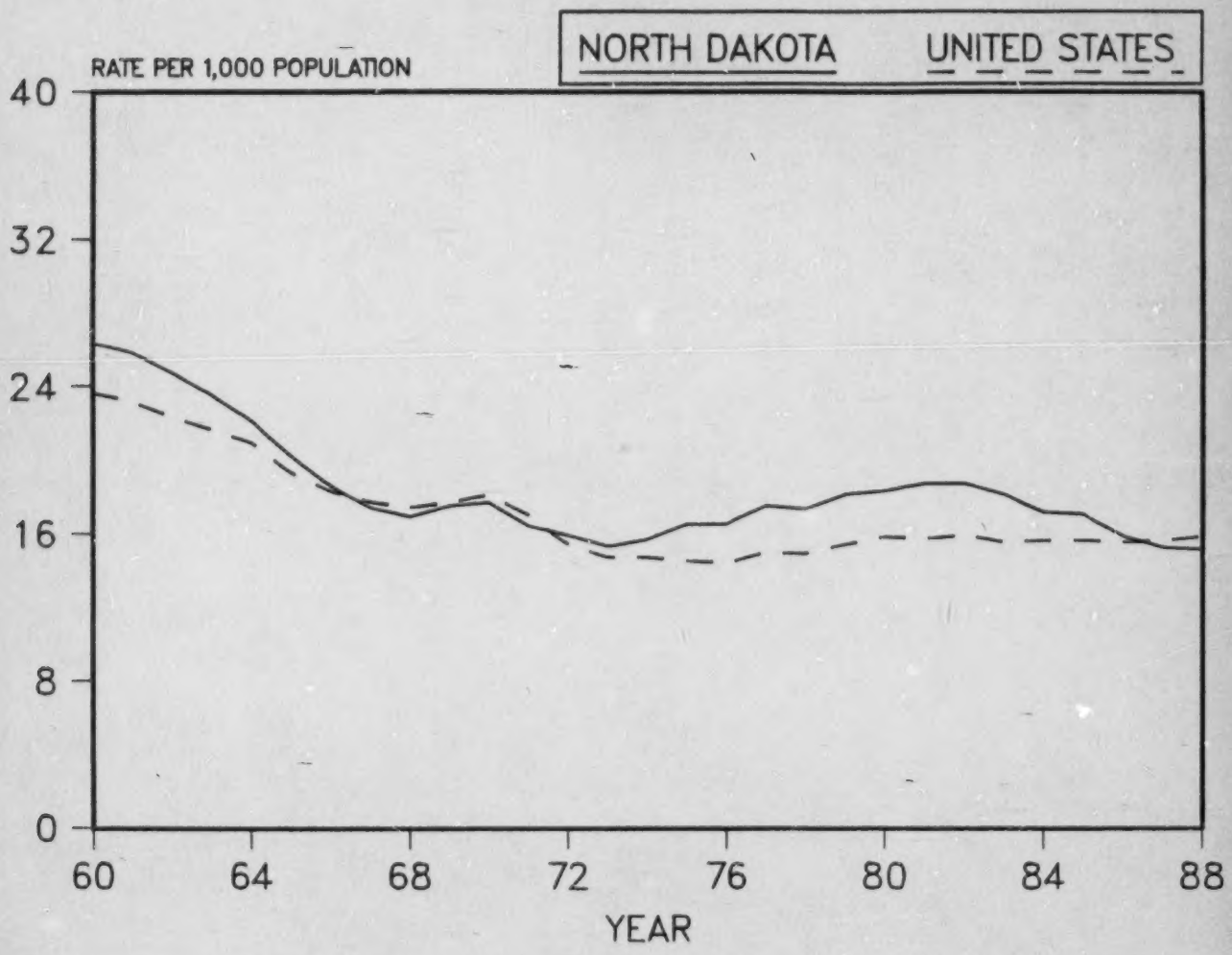
Table 1.1
Resident Live Births and Crude Birth Rates
North Dakota and United States
1960-1988

Year	United States		North Dakota	
	Live Births	Crude Birth Rate	Live Births	Crude Birth Rate
1960	4,257,850	23.7	16,690	26.4
1961	4,268,326	23.2	16,615	25.9
1962	4,167,362	22.4	15,842	24.8
1963	4,098,020	21.7	15,257	23.6
1964	4,027,490	21.0	14,405	22.2
1965	3,760,358	19.4	13,198	20.3
1966	3,606,274	18.4	12,159	18.7
1967	3,520,959	17.8	10,962	17.5
1968	3,501,564	17.5	10,631	17.0
1969	3,600,206	17.8	10,798	17.6
1970	3,731,386	18.2	11,004	17.8
1971	3,555,970	17.1	10,361	16.5
1972	3,258,411	15.5	10,115	16.0
1973	3,136,965	14.8	9,738	15.4
1974	3,159,958	14.8	10,010	15.8
1975	3,144,198	14.6	10,624	16.6
1976	3,167,788	14.5	10,724	16.6
1977	3,326,632	15.1	11,450	17.6
1978	3,333,279	15.0	11,347	17.4
1979	3,494,398	15.5	11,883	18.2
1980	3,612,258	15.9	11,995	18.4
1981	3,629,238	15.8	12,407	18.8
1982	3,680,537	15.9	12,655	18.8
1983	3,638,933	15.6	12,380	18.2
1984	3,669,141	15.7	11,833	17.2
1985	3,760,561	15.7	11,697	17.1
1986	3,756,547	15.6	10,824	15.9
1987	3,829,000(1)	15.7	10,303	15.3
1988	3,913,000(1)	15.9	10,111	15.2

(1) U.S. Estimate

Generally, state and national live birth frequency and crude birth rate patterns have been similar. These patterns showed a steady decline from 1960 through 1968, slight fluctuation from 1969 to 1973, and steady increase from 1973 through 1982. However, in 1983 through 1988, both North Dakota resident live birth frequencies and crude birth rates declined, a reversal of the 1973-1982 pattern of increase. Generally, since 1960, North Dakota's crude birth rates were higher than corresponding national rates.

Figure 1.2
Resident Live Birth Rates
North Dakota and United States
1960-1988



Racial Composition

During the 1979-1988 time period the racial composition of North Dakota resident live births changed slightly. White births declined from 92.0 percent to 87.6 percent of total live births, while non-white resident live births rose from 8.0 percent to 12.4 percent (Table 1.2).

Table 1.2
Resident Live Births by Race of Infant
North Dakota, 1979-1988

Year	Total Live Births		White		Native American		Other	
	Number	Percent of All Births	Number	Percent of All Births	Number	Percent of All Births	Number	Percent of All Births
1979	11,883	100.0	10,938	92.0	766	6.4	179	1.5
1980	11,995	100.0	10,935	91.2	864	7.2	196	1.6
1981	12,407	100.0	11,230	90.5	973	7.8	204	1.6
1982	12,655	100.0	11,395	90.0	1,034	8.2	226	1.8
1983	12,380	100.0	11,129	89.9	1,023	8.3	228	1.8
1984	11,833	100.0	10,639	89.9	962	8.1	232	2.0
1985	11,697	100.0	10,441	89.3	1,013	8.7	243	2.1
1986	10,824	100.0	9,624	88.9	984	9.1	216	2.0
1987	10,303	100.0	9,080	88.1	971	9.4	252	2.4
1988	10,111	100.0	8,855	87.6	1,025	10.1	231	2.3

Age of Mother

In 1988, 35.0 percent of all resident live births were to mothers less than 25 years of age (Table 1.3) as compared with 49.0 percent reported in 1979. The median age for all mothers was 27, while the corresponding medians for white mothers and Native American mothers were 27 and 24, respectively (Table 1.3).

Table 1.3
Resident Live Births by Age of Mother and Race of Infant
North Dakota, 1988

Age of Mother	Race of Infant							
	Total		White		Native American		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Under 15 Years	1	0.0	1	0.0	--	--	--	--
15-19 Years	766	7.6	546	6.2	202	19.7	18	7.8
20-24 Years	2,775	27.4	2,330	26.3	363	35.4	82	35.5
25-29 Years	3,801	37.6	3,433	38.8	287	28.0	81	35.1
30-34 Years	2,109	20.9	1,950	22.0	124	12.1	35	15.2
35-39 Years	592	5.9	534	6.0	44	4.3	14	6.1
40-44 Years	62	0.6	56	0.6	5	0.5	1	0.4
45 Years and Over	4	0.0	4	0.0	--	--	--	--
Not Stated	1	0.0	1	0.0	--	--	--	--
Total	10,111	100.0	8,855	100.0	1,025	100.0	231	100.0
Median Age of Mother	27		27		24		26	

Prenatal Care

For the 10,111 live born infants in 1988, prenatal care was initiated most often in the first trimester of pregnancy. This accounted for 80.5 percent of all women having live births. The most common number of prenatal visits fell within the interval 10-14. Tables 1.4 and 1.5 indicate the trimester prenatal care began and the number of prenatal visits.

During 1988, 61 resident live births or 6.0 of every 1,000 live births occurred without the mother having any prenatal care (Tables 1.4 and 1.5).

Table 1.4
Resident Live Births by Trimester
Prenatal Care Began and Race of Mother
North Dakota, 1988

Trimester Prenatal Care Began	Race of Mother							
	All Races		White		Native American		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	61	0.6	38	0.4	22	2.5	1	0.5
First	8,142	80.5	7,487	82.8	521	59.5	134	71.3
Second	1,501	14.8	1,233	13.6	229	26.1	39	20.7
Third	215	2.1	137	1.5	75	8.6	3	1.6
Not Stated	192	1.9	152	1.7	29	3.3	11	5.9
Total	10,111	100.0	9,047	100.0	876	100.0	188	100.0

Table 1.5
Resident Live Births by Number
of Prenatal Visits and Race of Mother
North Dakota, 1988

Number of Prenatal Visits	Race of Mother							
	All Races		White		Native American		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	61	0.6	38	0.4	22	2.5	1	0.5
1-4	421	4.2	243	2.7	174	19.9	4	2.1
5-9	3,519	34.8	3,154	34.9	312	35.6	53	28.2
10-14	5,273	52.2	4,854	53.7	320	36.5	99	52.7
15-19	659	6.5	606	6.7	34	3.9	19	10.1
20+	94	0.9	87	1.0	5	0.6	2	1.1
Not Stated	84	0.8	65	0.7	9	1.0	10	5.3
Total	10,111	100.0	9,047	100.0	876	100.0	188	100.0

Table 1.6
Resident Live Births With No Prenatal Care
by Age and Race of Mother
North Dakota, 1988

Age of Mother	Race of Mother							
	Total		White		Native American		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Under 15 Years	--	--	--	--	--	--	--	--
15-19 Years	13	17.0	8	14.1	5	27.3	--	--
20-24 Years	22	7.9	15	6.3	7	22.4	--	--
25-29 Years	15	3.9	8	2.3	6	25.0	1	15.6
30-34 Years	6	2.8	4	2.0	2	19.8	--	--
35-39 Years	5	8.4	3	5.5	2	55.6	--	--
40-44 Years	--	--	--	--	--	--	--	--
45 Years and Over	--	--	--	--	--	--	--	--
Total	61	6.0	38	4.2	22	25.1	1	5.3

Birth Weight

In 1988 the median birth weight for all North Dakota resident live births was 3,461 grams or approximately 7 pounds, 10 ounces (Table 1.7). A subgroup of major importance when analyzing birth weights is the infant weighing 2,500 grams or less (approximately 5 pounds, 8 ounces) at birth. Such infants have historically experienced higher mortality rates in their first year than those born with greater birth weight. In 1988, 487 total live births were at or below 2,500 grams or approximately 48 of every 1,000 live births.

The proportion of low weight infants varies with the race and age of the mother and the amount of prenatal care she has received. Tables 1.8 and 1.9 present data on these three variables with respect to birth weight.

Table 1.7
Resident Live Births by
Birth Weight and Race of Infant
North Dakota, 1988

Weight (In Grams)	Total	Race of Infant		
		White	Native American	Other
0-500	4	3	1	--
501-1,000	26	21	2	3
1,001-1,250	25	20	4	1
1,251-1,500	29	25	4	--
1,501-1,750	34	29	4	1
1,751-2,000	61	51	8	2
2,001-2,250	102	83	14	5
2,251-2,500	206	172	27	7
2,501-2,750	385	339	37	9
2,751-3,000	883	778	79	26
3,001-3,500	3,586	3,156	347	83
3,501-4,000	3,459	3,043	351	65
4,001-4,500	1,092	956	112	24
4,501-5,000	190	157	29	4
5,001 and Over	26	20	5	1
Not Stated	3	2	1	--
Total	10,111	8,855	1,025	231
Median Weight	3,461	3,462	3,481	3,375

Table 1.8
Resident Low Weight[1] Live Births and Low Birth Weight Ratios by Age of Mother and Race of Infant North Dakota, 1988

Age of Mother	Race of Infant							
	All Races		White		Native American		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Under 15 Years	--	--	--	--	--	--	--	--
15-19 Years	44	57.4	32	58.6	10	49.5	2	111.1
20-24 Years	134	48.3	103	44.2	24	66.1	7	85.4
25-29 Years	169	44.5	142	41.4	21	73.2	6	74.1
30-34 Years	96	45.5	90	46.2	5	40.3	1	28.6
35-39 Years	42	70.9	35	65.5	4	90.9	3	214.3
40-44 Years	2	32.3	2	35.7	--	--	--	--
45 Years and Over	--	--	--	--	--	--	--	--
Total	487	48.2	404	45.6	64	62.4	19	82.3

[1] 2,500 Grams or Less

Table 1.9
Resident Low Weight[1] Live Births and Low Birth Weight Ratios by Number of Prenatal Visits and Race of Mother North Dakota, 1988

Number of Prenatal Visits	Race of Mother							
	All Races		White		Native American		Other	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
None	12	169.7	8	210.5	3	136.4	1	1000.0
1-4	70	166.3	43	177.0	27	155.2	--	--
5-9	208	59.1	189	59.9	15	48.1	4	75.5
10-14	144	27.3	127	26.2	11	34.4	6	60.6
15-19	26	39.5	25	41.3	--	--	1	52.6
20+	11	117.0	9	103.4	1	200.0	1	500.0
Not Stated	16	--	12	--	2	--	2	--
Total	487	48.2	413	45.7	59	67.4	15	79.8

[1] 2,500 Grams or Less

Attendant at Birth

Data presented in Table 1.10 indicate nearly 98 percent of the resident live births were attended by a physician, either a M.D. or D.O. In addition, there were 133 live births attended by midwives and 88 live births attended to by registered nurses.

Table 1.10
Resident Live Births by Type of Attendant
North Dakota, 1988

Attendant	Number	Percent
Physician, M.D.	9,823	97.2
Physician, D.O.	58	0.6
Registered Nurse	88	0.9
Parent	8	0.1
Other	1	0.0
Midwife	133	1.3
Total	10,111	100.0

Out-of-Wedlock Live Births

Between 1960 and 1988 the number of North Dakota resident out-of-wedlock live births increased substantially (Figure 1.3 and Table 1.11). The smallest number of resident out-of-wedlock live births recorded since 1960 was 423 in 1961, while the largest corresponding frequency was 1,578 in 1988. During the same time period, out-of-wedlock ratios, which expresses out-of-wedlock live births per 1,000 total live births, has also increased substantially (Figure 1.4 and Table 1.11). The smallest ratio was 25.5 experienced in 1961, while the largest corresponding figure was 156.1 reported in 1988.

Figure 1.3
Resident Out-of-Wedlock Live Births
North Dakota, 1960-1988

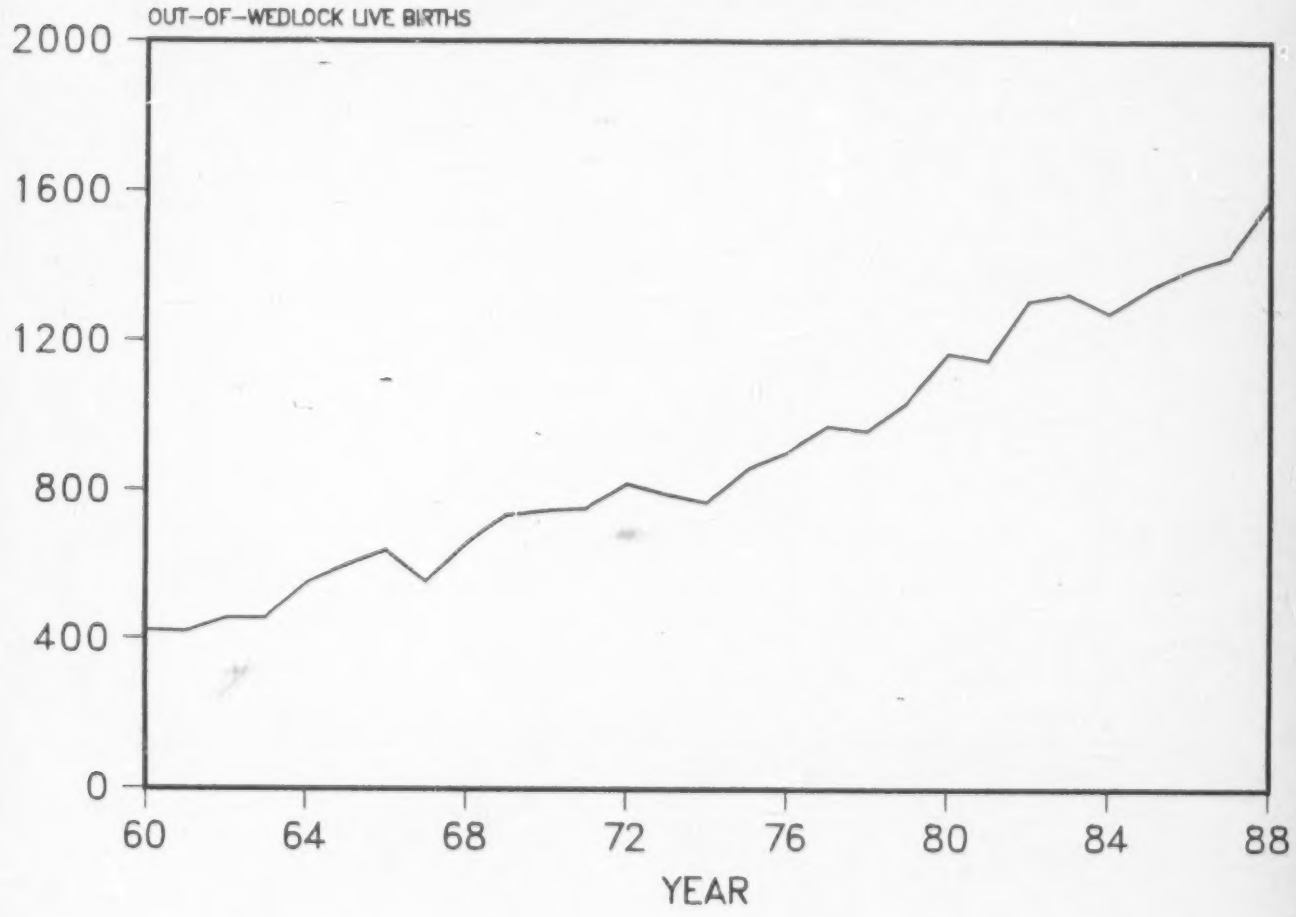
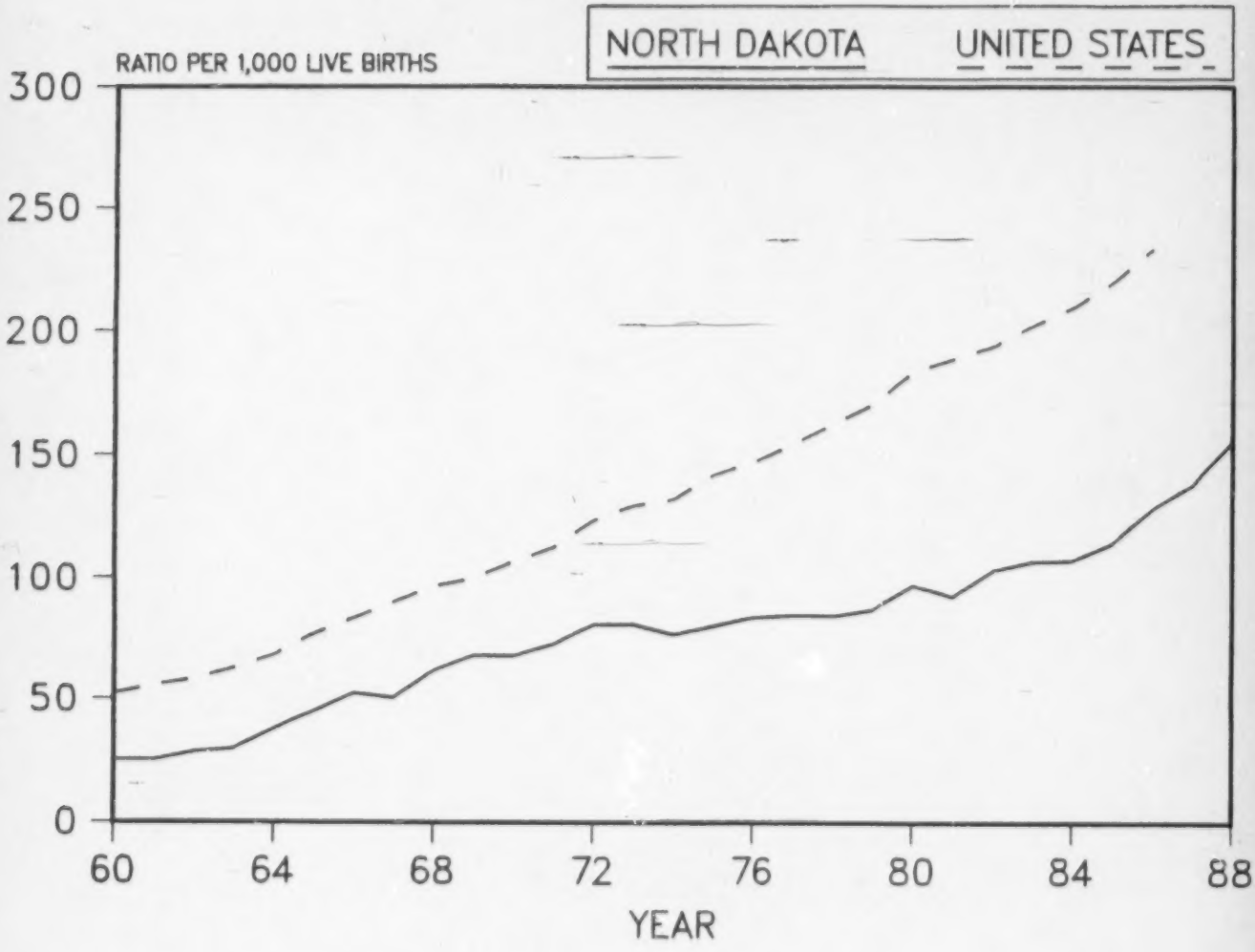


Table 1.11
Resident Out-of-Wedlock Live Births and
Out-of-Wedlock Birth Ratios
North Dakota and United States
1960-1988

Year	United States		North Dakota	
	Out-of-Wedlock Births	Out-of-Wedlock Ratio	Out-of-Wedlock Births	Out-of-Wedlock Ratio
1960	224,300	52.7	427	25.6
1961	240,200	56.3	423	25.5
1962	245,100	58.8	460	29.0
1963	259,400	63.3	460	30.2
1964	275,700	68.5	552	38.3
1965	291,200	77.4	601	45.5
1966	302,400	83.9	641	52.7
1967	318,100	90.3	556	50.7
1968	339,200	96.9	659	62.0
1969	360,800	100.2	735	68.1
1970	398,700	106.9	748	68.0
1971	401,400	112.9	754	72.8
1972	403,200	123.7	819	81.0
1973	407,300	129.8	790	81.1
1974	418,100	132.3	768	76.7
1975	447,900	142.5	858	80.7
1976	468,100	147.8	904	84.3
1977	515,700	155.0	974	85.1
1978	543,900	163.2	961	84.7
1979	597,800	171.1	1,040	87.5
1980	665,747	184.3	1,168	97.4
1981	686,605	189.2	1,150	92.7
1982	715,227	194.3	1,308	103.4
1983	737,893	202.8	1,328	107.3
1984	770,355	210.0	1,274	107.7
1985	828,174	220.2	1,342	114.7
1986	878,477	233.9	1,393	128.7
1987	--(1)	--	1,427	138.5
1988	--(1)	--	1,578	156.1

(1) Not Available

Figure 1.4
Resident Out-of-Wedlock Birth Ratios
North Dakota and United States
1960-1988



Generally, state and national out-of-wedlock frequency and out-of-wedlock ratio patterns have been similar, that is, substantially increasing throughout the 1960-1988 time period. Although both have trended upward, North Dakota out-of-wedlock ratios have been much lower than corresponding national ratios.

Table 1.12
Resident Out-of-Wedlock Live Births
and Out-of-Wedlock Ratios by Age of Mother
North Dakota, 1988

Age of Mother	Total Live Births	Out-of-Wedlock Births	Out-of-Wedlock Ratio
Under 15 Years	1	1	1,000.0
15-19 Years	766	500	652.7
20-24 Years	2,775	576	207.6
25-29 Years	3,801	312	82.1
30-34 Years	2,109	126	59.7
35-39 Years	592	55	92.9
40-44 Years	62	6	96.8
45 Years and Over	4	1	250.0
Not Stated	1	1	--
Total	10,111	1,578	156.1

Congenital Anomalies

Congenital anomalies were reported in 167 of the 10,111 resident live births in 1988 (Table 1.13). This translates to a rate of 1,651.7 per 100,000 live births. "Certain Congenital Musculoskeletal Deformities" was the most frequent reported anomaly occurring at a rate of 217.6 per 100,000 live births and comprising 13.2 percent of all anomalies mentioned. The frequency of reporting specific anomalies is affected by the reporting cycle. Many conditions may or may not be apparent at birth when the birth certificate is completed.

Table 1.13
Resident Congenital Anomalies and
Associated Rates by Types of Anomaly
North Dakota, 1988

Type of Anomaly	ICDA Code	Number of Conditions	Rate Per-100,000 Live Births
Anencephalus and Similar Anomalies	740	2	19.8
Spina Bifida	741	4	39.6
Other Congenital Anomalies of the Nervous System	742	5	49.6
Congenital Anomalies of the Eye	743	1	9.9
Congenital Anomalies of the Ear, Face, and Neck	744	1	9.9
Bulbus Cordis Anomalies and Anomalies of the Cardiac Septal Closure	745	3	29.7
Other Congenital Anomalies of the Heart	746	8	79.1
Other Congenital Anomalies of the Circulatory System	747	7	69.2
Congenital Anomalies of the Respiratory System	748	3	29.7
Cleft Palate and Cleft Lip	749	18	178.0
Other Congenital Anomalies of Upper Alimentary Tract	750	3	29.7
Other Congenital Anomalies of the Digestive System	751	5	49.6
Congenital Anomalies of the Genital Organs	752	17	168.1
Congenital Anomalies of the Urinary System	753	4	39.6
Certain Congenital Musculoskeletal Deformities	754	22	217.6
Other Congenital Anomalies of the Limbs	755	17	168.1
Other Congenital Musculoskeletal Anomalies	756	9	89.0
Congenital Anomalies of the Integument	757	15	148.4
Chromosomal Anomalies	758	11	108.8
Other and Unspecified Congenital Anomalies	759	12	118.7
Total		167	1,651.7

MORTALITY

Mortality:
An Overview 1988

Total Resident Deaths	5,664
Crude Death Rate	8.5
Total Resident Fetal Deaths	65
Fetal Death Ratio	6.4
Infant Deaths	107
Infant Death Rate	10.6
Neonatal Deaths	58
Neonatal Death Rate	5.7
Perinatal Deaths	123
Perinatal Death Rate	12.1
Maternal Deaths	0
Maternal Death Rate	0.0

Deaths

Between 1960 and 1988 the number of deaths occurring to North Dakota residents increased from 5,449 to 5,664 (Figure 2.1). However, during the same time period the crude death rate declined, from 8.6 to 8.5. The lowest crude death rate was recorded in 1986 (7.8), while the highest corresponding rates were observed in 1969, 1970, 1973, and 1974 (a rate of 9.1) (Figure 2.2 and Table 2.1).

Generally, state and national crude death rates have followed similar trends, ones of slight decline, during the 1960-1988 time period. Although state and national crude death rates have followed similar patterns, generally, North Dakota's crude death rates have been lower than corresponding national rates (Figure 2.2 and Table 2.1).

Of the 5,664 North Dakota resident deaths reported in 1988, 3,090 were male, 2,574 were female.

The most frequent number of deaths occurred to individuals 80-84 years of age and the least number to persons aged 5-9.

Figure 2.1
Resident Deaths
North Dakota, 1960-1988

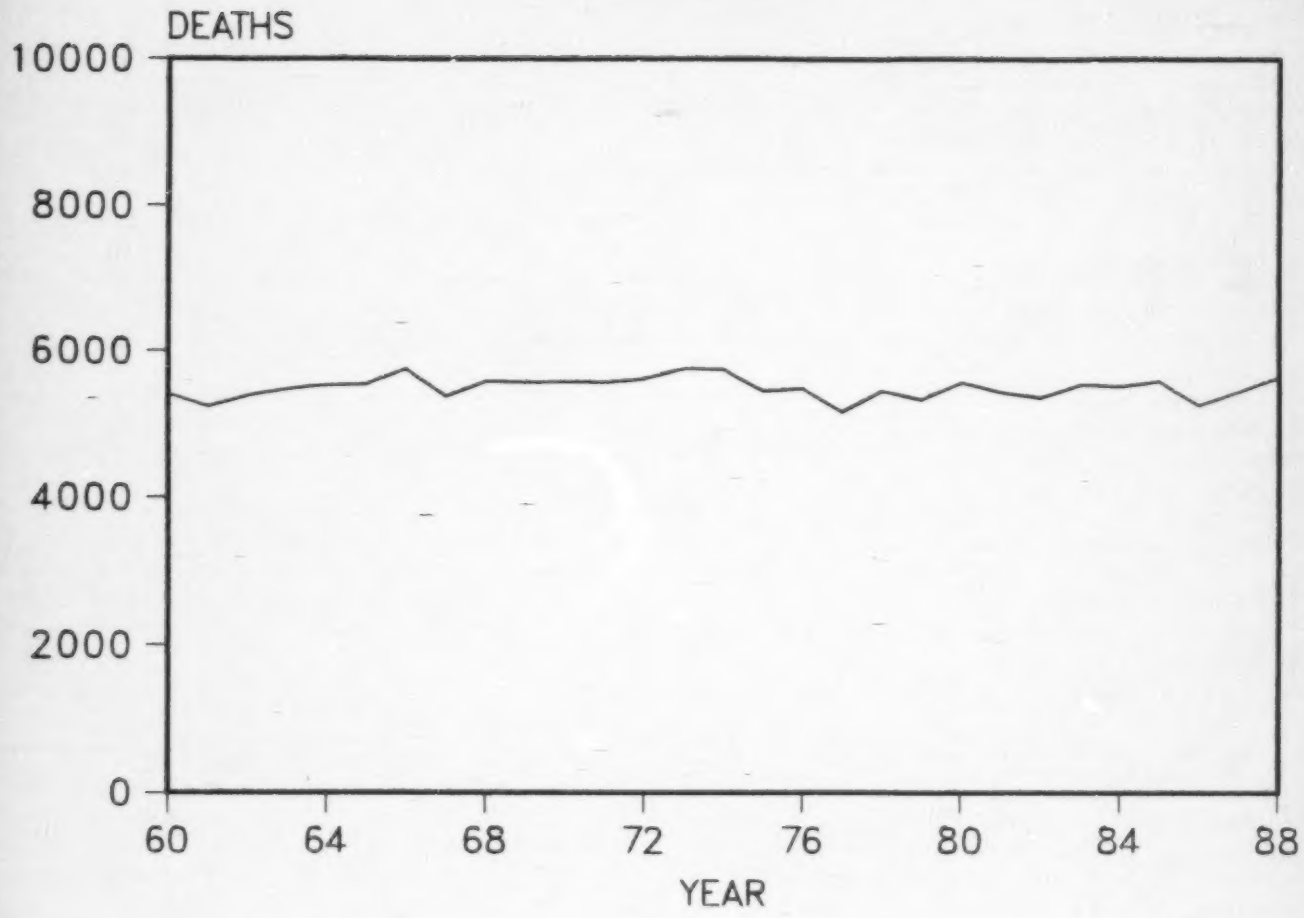


Table 2.1
Resident Deaths and Crude Death Rates
North Dakota and United States
1960-1988

Year	United States		North Dakota	
	Number	Crude Death Rate	Number	Crude Death Rate
1960	1,711,982	9.5	5,449	8.6
1961	1,701,522	9.3	5,274	8.2
1962	1,756,720	9.5	5,424	8.5
1963	1,813,549	9.6	5,516	8.5
1964	1,798,051	9.4	5,570	8.6
1965	1,828,136	9.4	5,579	8.6
1966	1,863,149	9.5	5,783	8.9
1967	1,851,323	9.4	5,401	8.6
1968	1,930,082	9.7	5,611	9.0
1969	1,921,990	9.5	5,595	9.1
1970	1,921,031	9.4	5,606	9.1
1971	1,927,543	9.3	5,591	8.9
1972	1,963,944	9.4	5,651	9.0
1973	1,973,003	9.3	5,789	9.1
1974	1,934,388	9.0	5,772	9.1
1975	1,892,879	8.8	5,482	8.6
1976	1,909,440	8.8	5,523	8.5
1977	1,899,597	8.6	5,198	8.0
1978	1,927,788	8.7	5,484	8.4
1979	1,913,841	8.5	5,360	8.2
1980	1,989,841	8.7	5,596	8.6
1981	1,977,981	8.6	5,456	8.3
1982	1,974,797	8.5	5,385	8.0
1983	2,019,201	8.6	5,569	8.2
1984	2,039,369	8.7	5,538	8.1
1985	2,086,440	8.7	5,618	8.2
1986	2,105,361	8.7	5,285	7.8
1987	2,125,080(1)	8.7	5,476	8.1
1988	2,165,920(1)	8.8	5,664	8.5

(1) U.S. Estimate

Figure 2.2
Resident Death Rates
North Dakota and United States
1960-1988

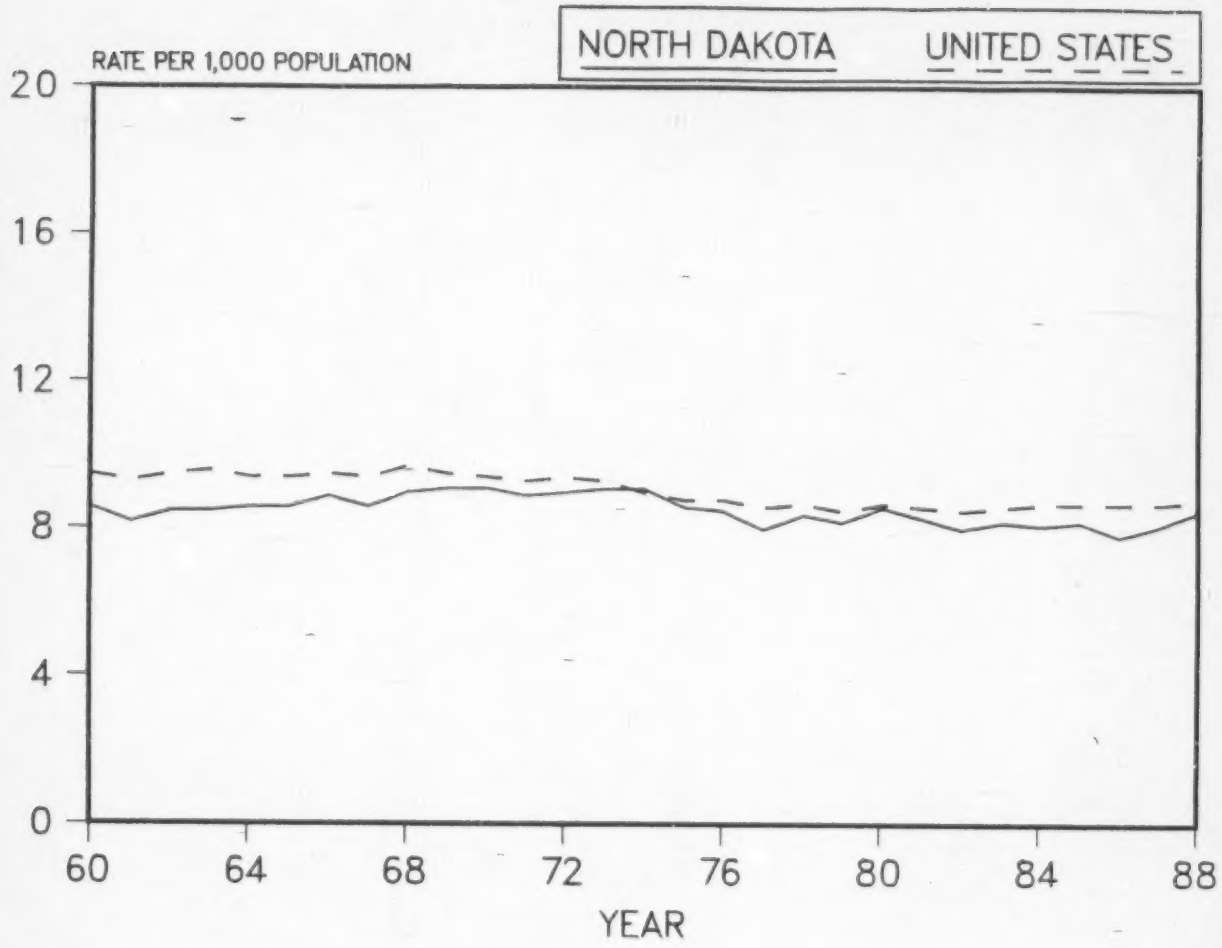


Table 2.2
Resident Deaths by Age, Race, and Sex
North Dakota, 1988

Age	Total			White			Native American			Other		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Under 1 Year	107	73	34	90	64	26	17	9	8	--	--	--
1-4 Years	21	15	6	18	13	5	3	2	1	--	--	--
5-9 Years	11	8	3	9	7	2	2	1	1	--	--	--
10-14 Years	12	4	8	10	3	7	2	1	1	--	--	--
15-19 Years	41	27	14	35	24	11	6	3	3	--	--	--
20-24 Years	57	43	14	50	39	11	7	4	3	--	--	--
25-29 Years	40	31	9	34	25	9	6	6	--	--	--	--
30-34 Years	40	31	9	33	28	5	7	3	4	--	--	--
35-39 Years	51	29	22	47	26	21	3	2	1	1	1	--
40-44 Years	66	45	21	57	37	20	9	8	1	--	--	--
45-49 Years	83	55	28	74	47	27	9	8	1	--	--	--
50-54 Years	137	93	44	127	85	42	8	6	2	2	2	--
55-59 Years	214	132	82	208	128	80	6	4	2	--	--	--
60-64 Years	317	201	116	296	189	107	19	11	8	2	1	1
65-69 Years	487	319	168	467	306	161	19	13	6	1	--	1
70-74 Years	684	420	264	667	406	261	17	14	3	--	--	--
75-79 Years	851	518	333	836	510	326	14	8	6	1	--	1
80-84 Years	873	424	449	859	417	442	14	7	7	--	--	--
85-89 Years	791	342	449	782	340	442	9	2	7	--	--	--
90 and Over	781	280	501	776	280	496	5	--	5	--	--	--
Total	5,664	3,090	2,574	5,475	2,974	2,501	182	112	70	7	4	3

Leading Causes of Death

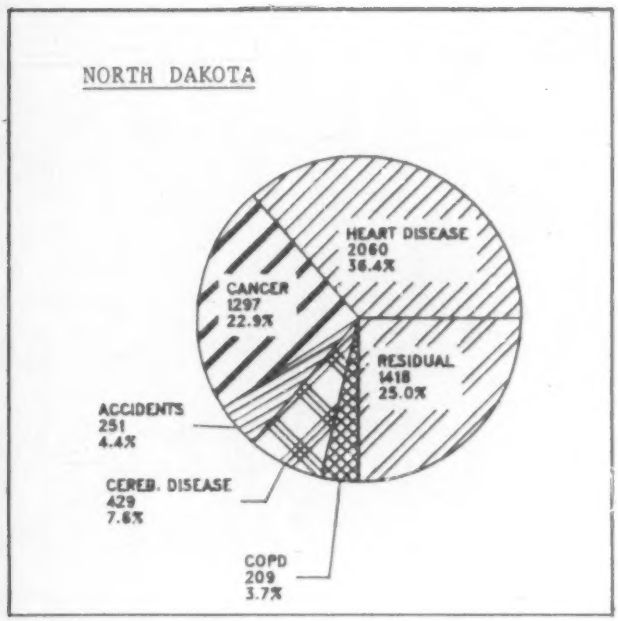
In 1988, 85.0 percent of all North Dakota resident deaths were attributable to the ten leading causes of death. These principal causes of death, within the state, have remained much the same in recent years. The number of deaths and death rates for the ten leading causes are shown in Table 2.3. The proportion of the total deaths resulting from five of the ten principal causes is illustrated in Figure 2.3. In addition, median ages at death by leading cause of death are presented in Figure 2.4.

Table 2.3
Leading Causes of Resident Death and Cause-Specific Rates (1)
North Dakota and United States
1988

United States				North Dakota			
Cause	Rank	Deaths	Death Rate	Cause	Rank	Deaths	Death Rate
Diseases of the Heart	1	763,870	310.8	Diseases of the Heart	1	2,060	308.8
Malignant Neoplasms	2	485,570	197.5	Malignant Neoplasms	2	1,297	194.4
Cerebrovascular Disease	3	149,140	60.7	Cerebrovascular Disease	3	429	64.3
Accidents	4	95,460	38.8	Accidents	4	251	37.6
Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	81,630	33.2	Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	209	31.3
Influenza and Pneumonia	6	77,010	31.3	Influenza and Pneumonia	6	207	31.0
Diabetes	7	39,450	16.0	Diabetes	7	118	17.7
Suicide	8	28,820	11.7	Atherosclerosis	8	101	15.1
Cirrhosis of the Liver	9	25,980	10.6	Suicide	9	75	11.2
Atherosclerosis	10	23,610	9.6	Other Diseases of the Arteries	10	67	10.0
Subtotal		1,770,540	720.3	Subtotal		4,814	721.7
All Other Causes		395,380	160.9	All Other Causes		850	127.4
Total		2,165,920	881.2	Total		5,664	849.1

(1) Per 100,000 Resident Population

Figure 2.3
Leading Causes of Resident Death
North Dakota and United States
1988



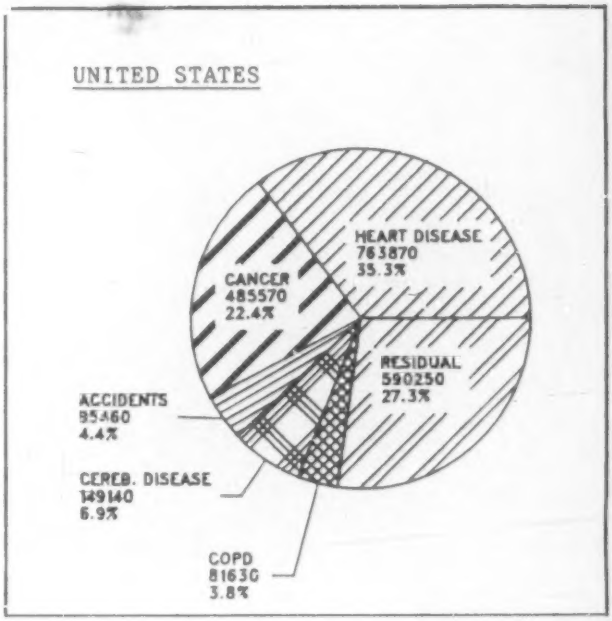
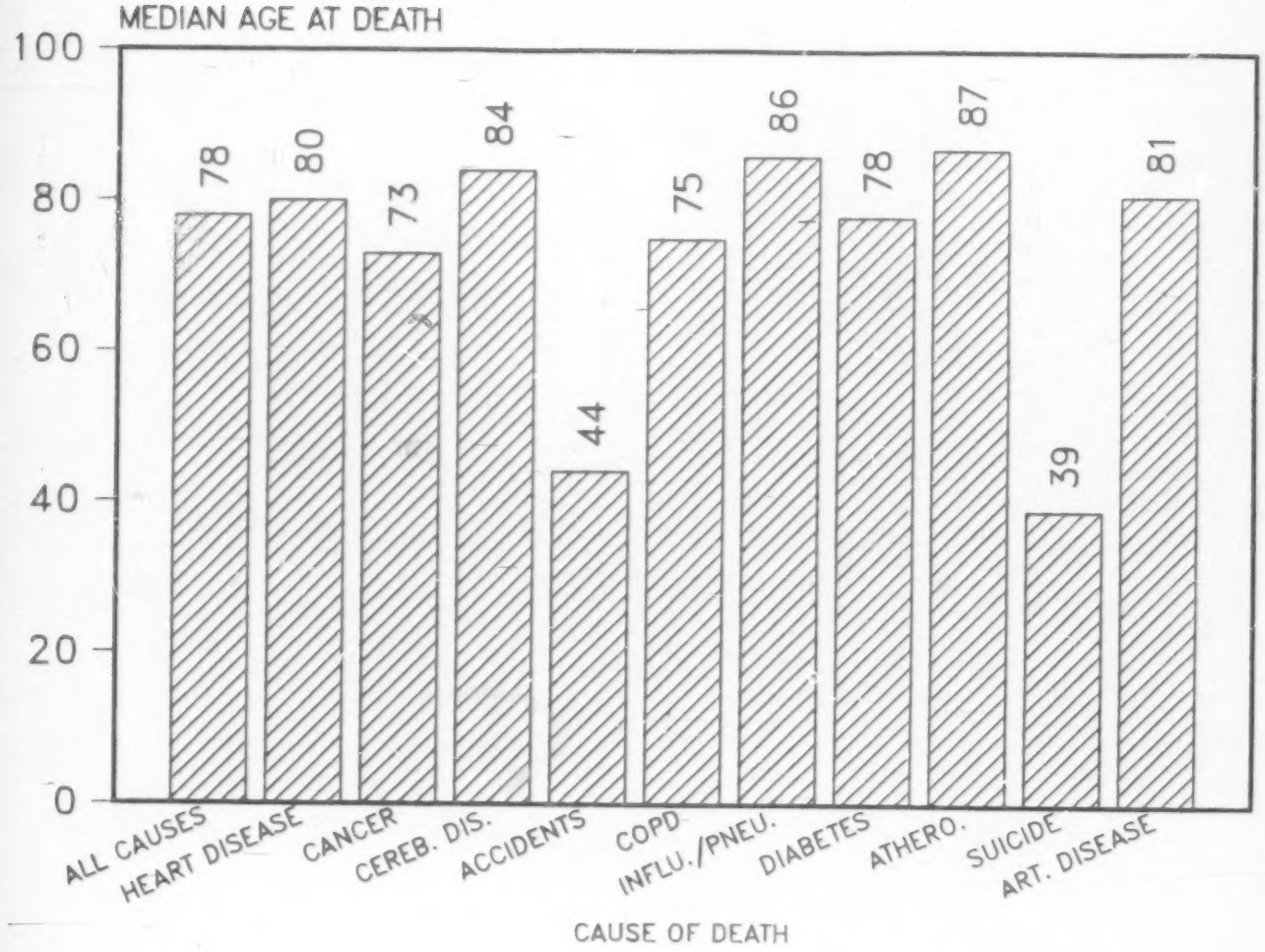


Figure 2.4
Leading Causes of Resident Death
by Median Age at Death
North Dakota, 1988



As mentioned previously, the most frequent causes of death among all North Dakota residents has changed little in recent years. This, however, does not imply similarity in the leading causes of death among residents at different ages or of different gender. Figure 2.5 and Table 2.4 contains the most frequent causes of death by age.

Examination of Figure 2.5 and Table 2.4 discloses that major differences in the leading causes of death were associated with age. Diseases of the heart and malignant neoplasms had the most widespread significance of any conditions, as they were present in 7 of the 8 age cohorts. In addition, accidents were present in 6 of the 8 cohorts. The variation in leading causes of death by age was most evident among deaths to infants under one year of age. External causes of death, including accidents and suicides, were predominant among persons ages 1 through 34. At ages 35 years and older, chronic conditions were responsible for the largest proportion of deaths.

Figure 2.5
Leading Causes of Resident Death by Age
North Dakota, 1988

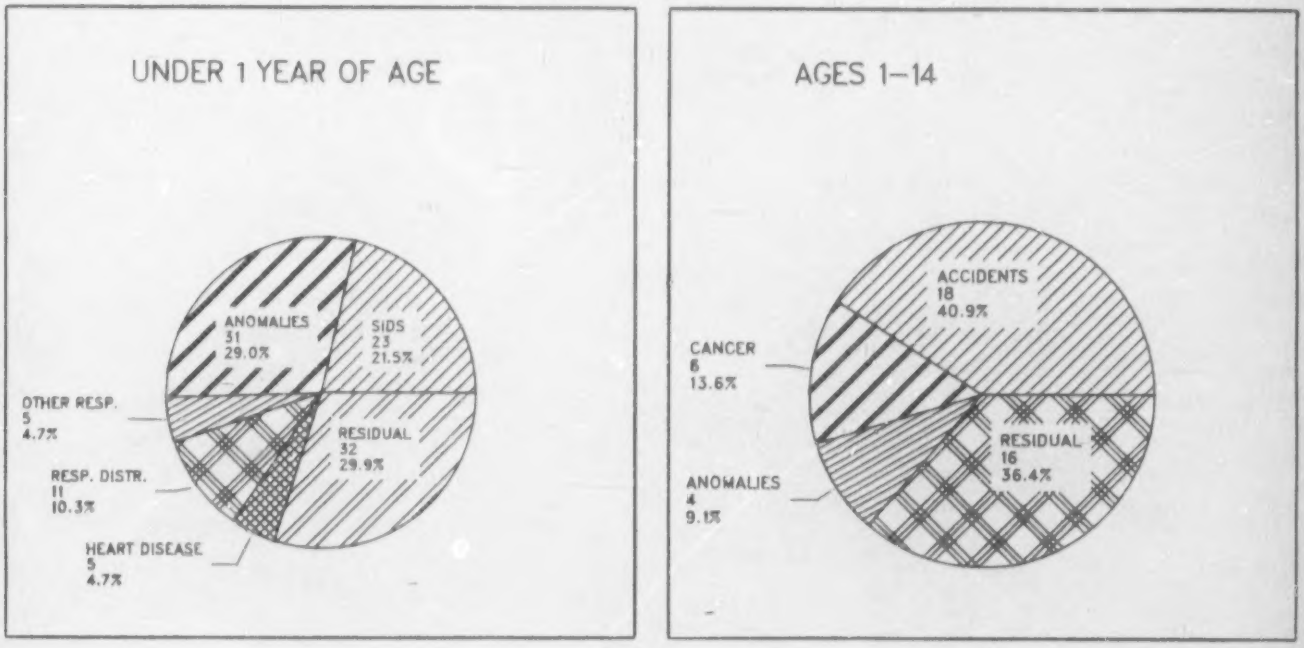
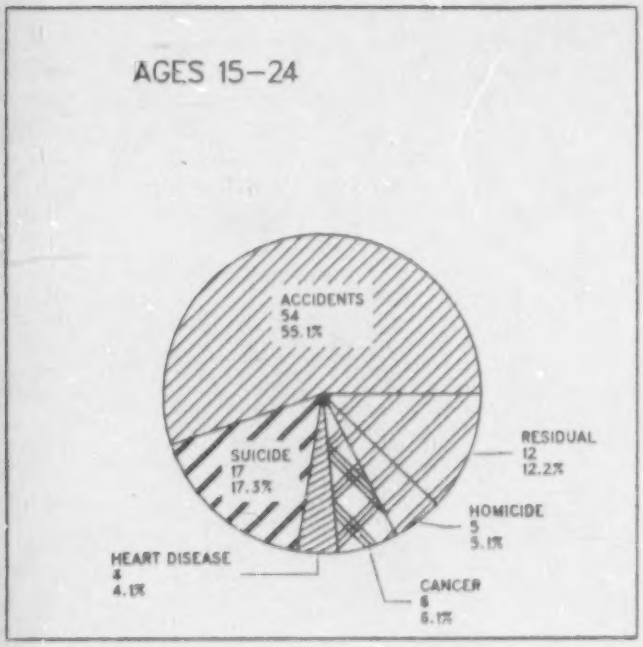
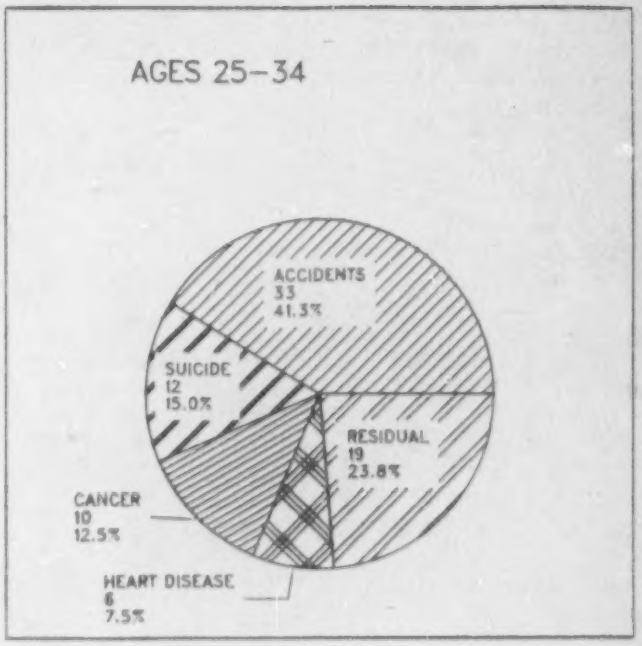
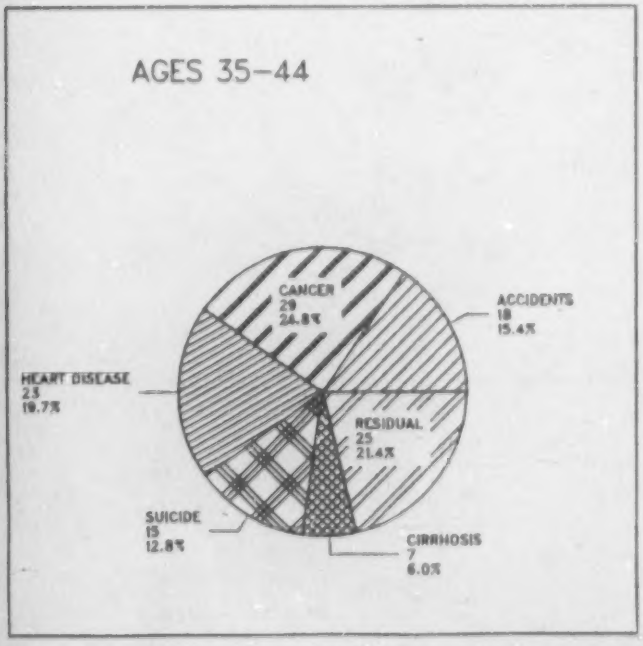


Figure 2.5 (Continued)
Leading Causes of Resident Death by Age
North Dakota, 1988







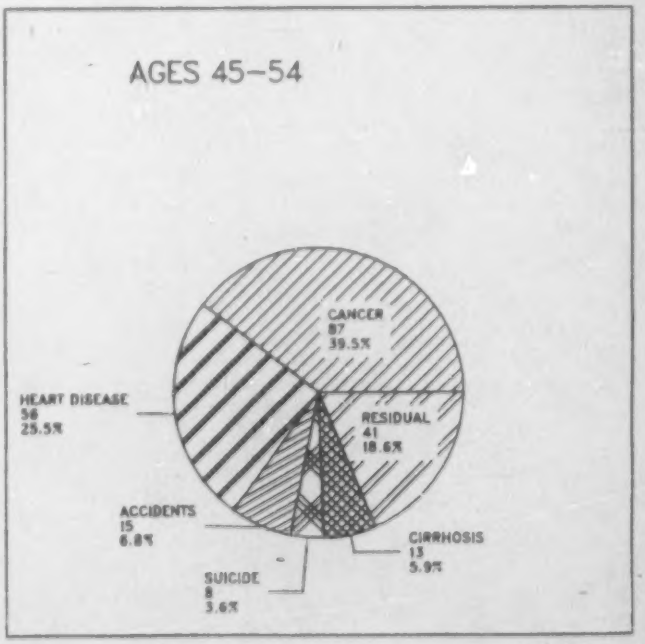


Figure 2.5 (Continued)
Leading Causes of Resident Death by Age
North Dakota, 1988

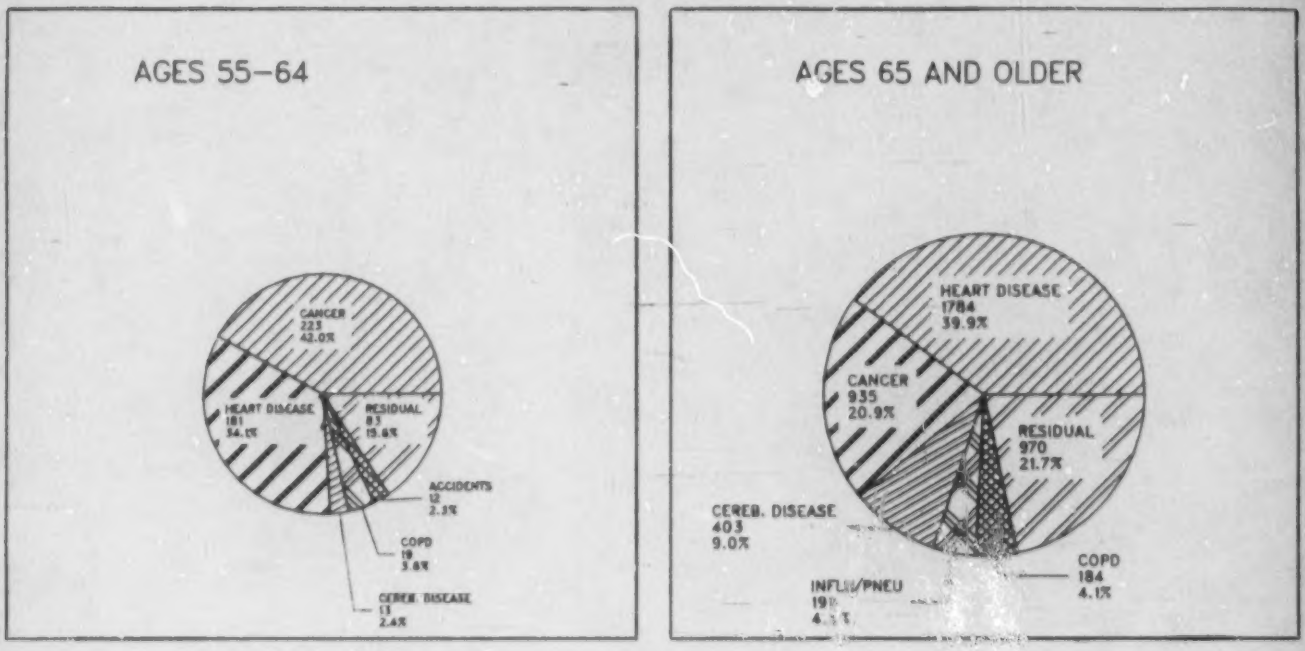


Table 2.4
Leading Causes of Resident Death by Age
North Dakota, 1988

Rank	All Ages	Under 1 Year	1-14	15-24	25-34	35-44	45-54	55-64	65 and Older
1	Diseases of the Heart 2,060	Congenital Anomalies 31	Accidents 18	Accidents 54	Accidents 33	Malignant Neoplasms 29	Malignant Neoplasms 87	Malignant Neoplasms 223	Diseases of the Heart 1,784
2	Malignant Neoplasms 1,297	SIDS 23	Malignant Neoplasms 6	Suicide 17	Suicide 12	Diseases of the Heart 23	Diseases of the Heart 56	Diseases of the Heart 181	Malignant Neoplasms 935
3	Cerebro-vascular Disease 429	Respiratory Distress Syndrome 11	Congenital Anomalies 4	Malignant Neoplasms 6	Malignant Neoplasms 10	Accidents 18	Accidents 15	COPD 19	Cerebro-vascular Disease 403
4	Accidents 251	Other Respiratory Conditions 5	------	Homicide 5	Diseases of the Heart 6	Suicide 15	Cirrhosis 13	Cerebro-vascular Disease 13	Influenza and Pneumonia 191
5	COPD 209	Diseases of the Heart 5	------	Diseases of the Heart 4	------	Cirrhosis 7	Suicide 8	Accidents 12	COPD 184
Total Deaths All Causes	5,664	107	44	98	80	117	220	531	4,467

Diseases of the Heart

In 1988, 2,060 North Dakota residents died from diseases of the heart. Heart disease continued to be the single leading cause of death in North Dakota and in the United States, accounting for more deaths than the next three leading causes combined; namely malignant neoplasms, cerebrovascular disease, and accidental deaths.

Examination of Table 2.5 indicates that heart disease deaths were more prevalent in the older age groups and that male heart disease deaths were more frequent than female deaths. Nearly 67 percent of the state's resident heart disease deaths were to individuals 75 years of age and older. In addition, male deaths were substantially more frequent in nearly all age groups.

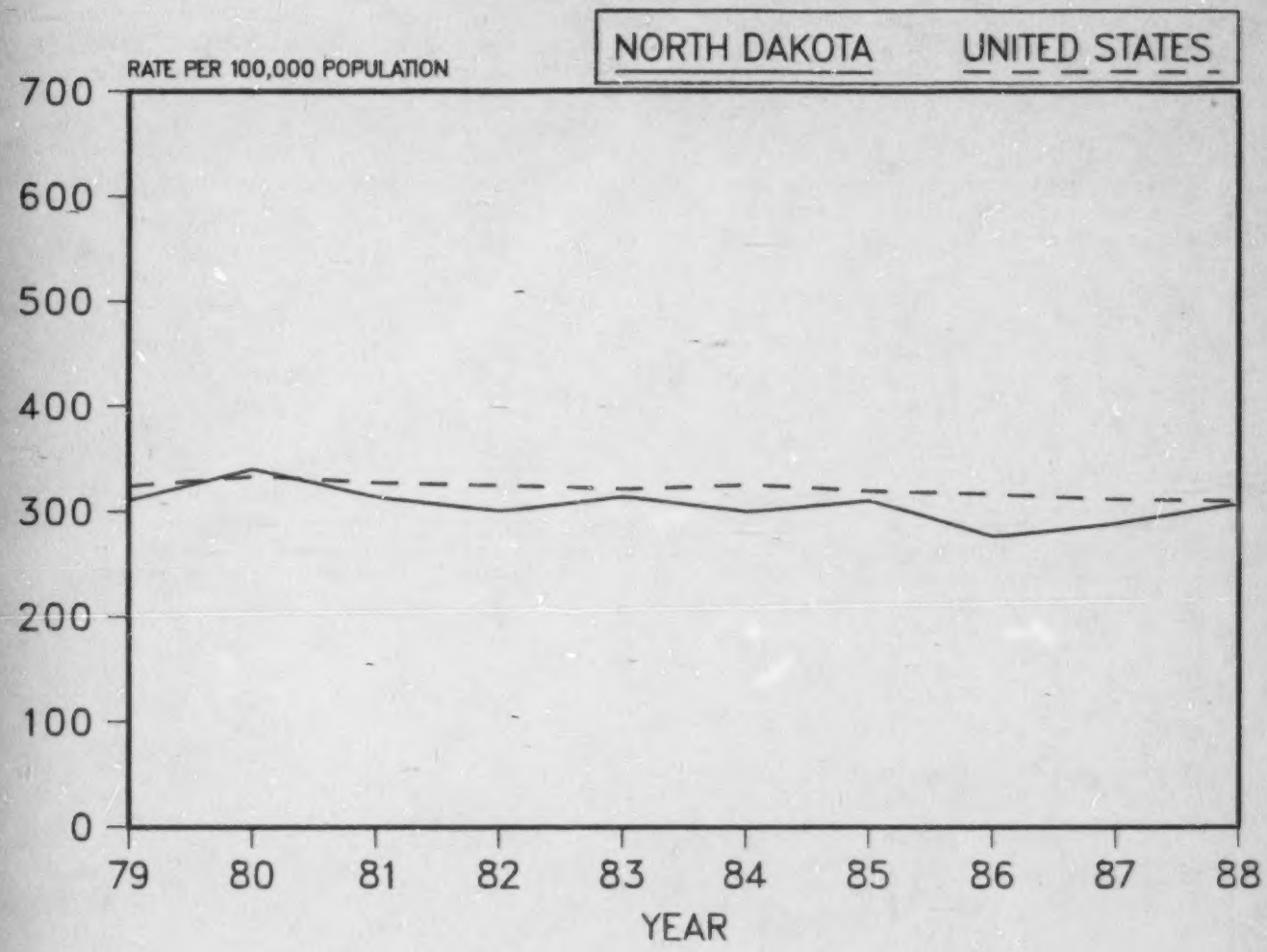
During the 1979-1988 time period, diseases of the heart death rates fluctuated somewhat, with a slight decline noted, both nationwide and within North Dakota. The 1988 state death rate was slightly lower than the corresponding United States rate (Figure 2.6).

Table 2.5
Resident Deaths Due to Diseases of the Heart
by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	5	3	2	3	2	--	--
1-4 Years	1	--	1	--	1	--	--
5-14 Years	--	--	--	--	--	--	--
15-24 Years	4	4	--	4	--	--	--
25-34 Years	6	5	1	4	1	1	--
35-44 Years	23	21	2	19	2	2	--
45-54 Years	56	46	10	41	10	5[1]	--
55-64 Years	181	130	51	123	50	7	1
65-74 Years	408	260	148	252	143	8	5
75-84 Years	693	367	326	359	321	8	5
85+ Years	683	271	412	271	406	--	6
Total	2,060	1,107	953	1,076	936	31	17

(1) Includes One "Other" Race Male

Figure 2.6
Resident Heart Disease Death Rates
North Dakota and United States
1979-1988



Cancer

Of the 5,664 North Dakota resident deaths, 1,297 persons died from cancer in 1988. Of these cancer deaths, 729 were male, while 568 were female. Cancer deaths in general, and male cancer deaths in particular, were more prevalent in the older age groups (Table 2.6).

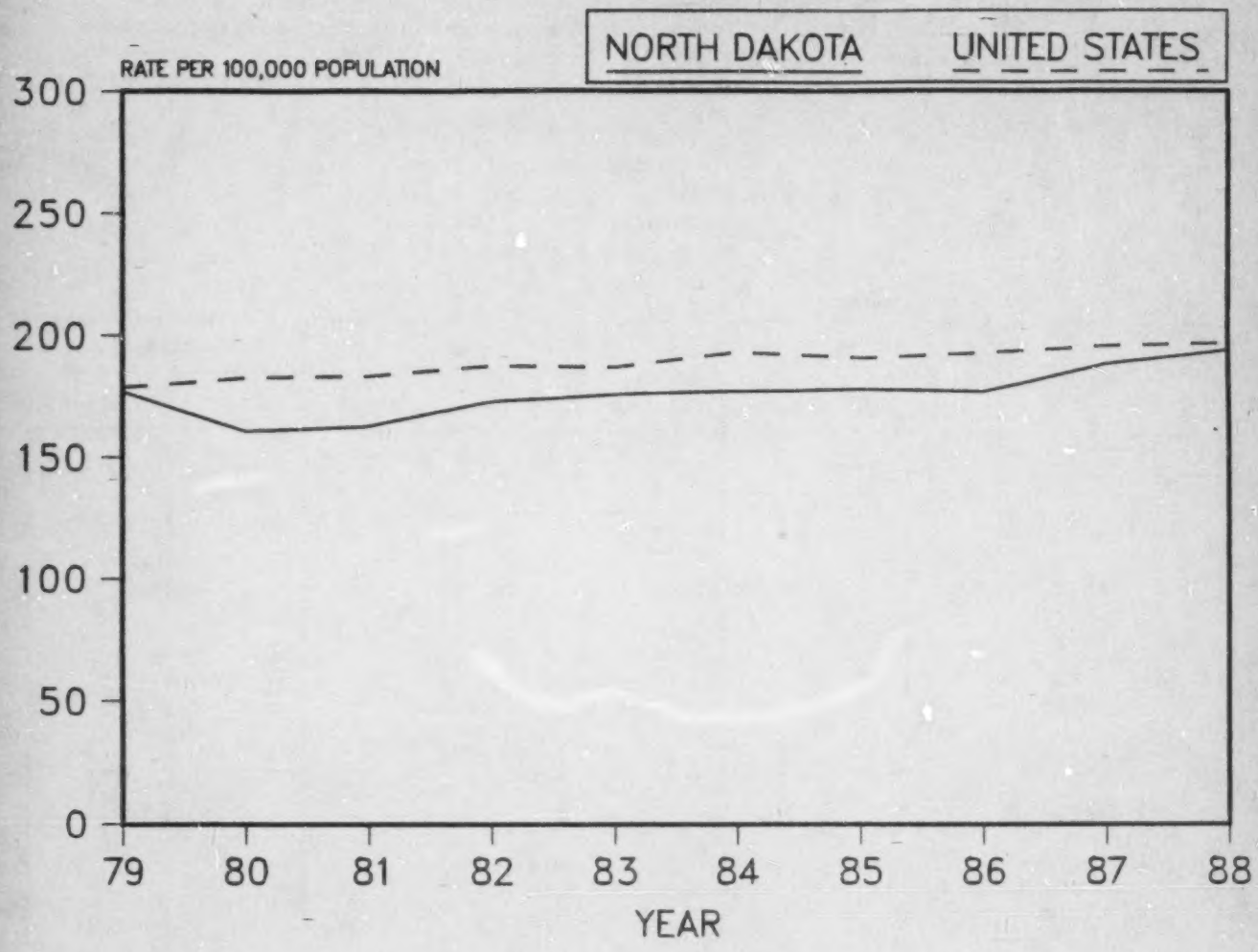
Generally, both national and statewide cancer death rates increased slightly during the 1979-1988 time period. In 1988 the state cancer death rate was slightly lower than the corresponding national rate (Figure 2.7).

Table 2.6
Resident Deaths Due to Malignant Neoplasms by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	1	1	--	1	--	--	--
1-4 Years	1	1	--	1	--	--	--
5-14 Years	5	4	1	4	1	--	--
15-24 Years	6	4	2	4	2	--	--
25-34 Years	10	7	3	6	3	1	--
35-44 Years	29	11	18	11	17	--	1
45-54 Years	87	51	36	46	35	5(1)	1
55-64 Years	223	121	102	116	99	5	3(2)
65-74 Years	373	225	148	220	145	5	3
75-84 Years	399	228	171	227	166	1	5
85+ Years	163	76	87	76	86	--	1
Total	1,297	729	568	712	554	17	14

(1) Includes One "Other" Race Male
(2) Includes One "Other" Race Female

Figure 2.7
Resident Malignant Neoplasm Death Rates
North Dakota and United States
1979-1988



Cerebrovascular Disease

Deaths due to cerebrovascular disease (CVD) numbered 429 among North Dakota residents in 1988. Of the total deaths, 153 were male and 276 were female.

CVD deaths were substantially more prevalent in the older age groups. Nearly 80 percent of North Dakota's CVD deaths were to individuals ages 75 years and older (Table 2.7).

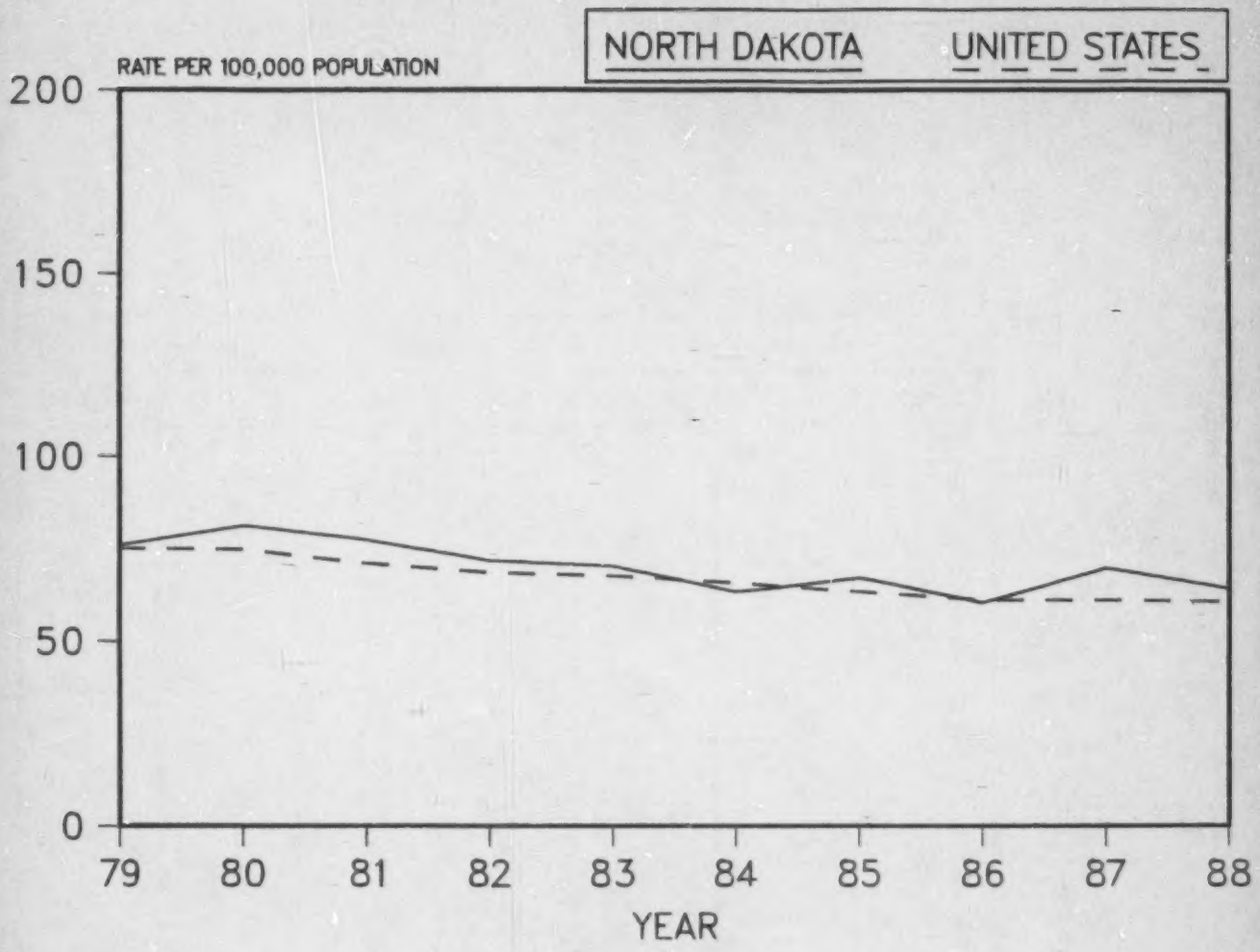
The historic pattern (1979-1988) of cerebrovascular disease death rates for North Dakota and the United States has been one of general decline. In 1988 the state CVD death rate was slightly higher than the corresponding national rate (Figure 2.8).

Table 2.7
Resident Deaths Due to
Cerebrovascular Disease by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	1	--	1	--	--	--	1
1-4 Years	1	1	--	1	--	--	--
5-14 Years	--	--	--	--	--	--	--
15-24 Years	--	--	--	--	--	--	--
25-34 Years	1	1	--	1	--	--	--
35-44 Years	4	1	3	1	3	--	--
45-54 Years	6	2	4	2	3	--	1
55-64 Years	13	7	6	7	6	--	--
65-74 Years	61	30	31	28	30	2	1(1)
75-84 Years	146	55	91	54	91	1	--
85+ Years	196	56	140	55	139	1	1
Total	429	153	276	149	272	4	4

(1) Includes One "Other" Race Female

Figure 2.8
Resident Cerebrovascular Disease Death Rates
North Dakota and United States
1979-1988



Accidents

Approximately 4 percent of all North Dakota resident deaths were the results of accidents. Of the total 251 accidental deaths, 172 were male while 79 were female.

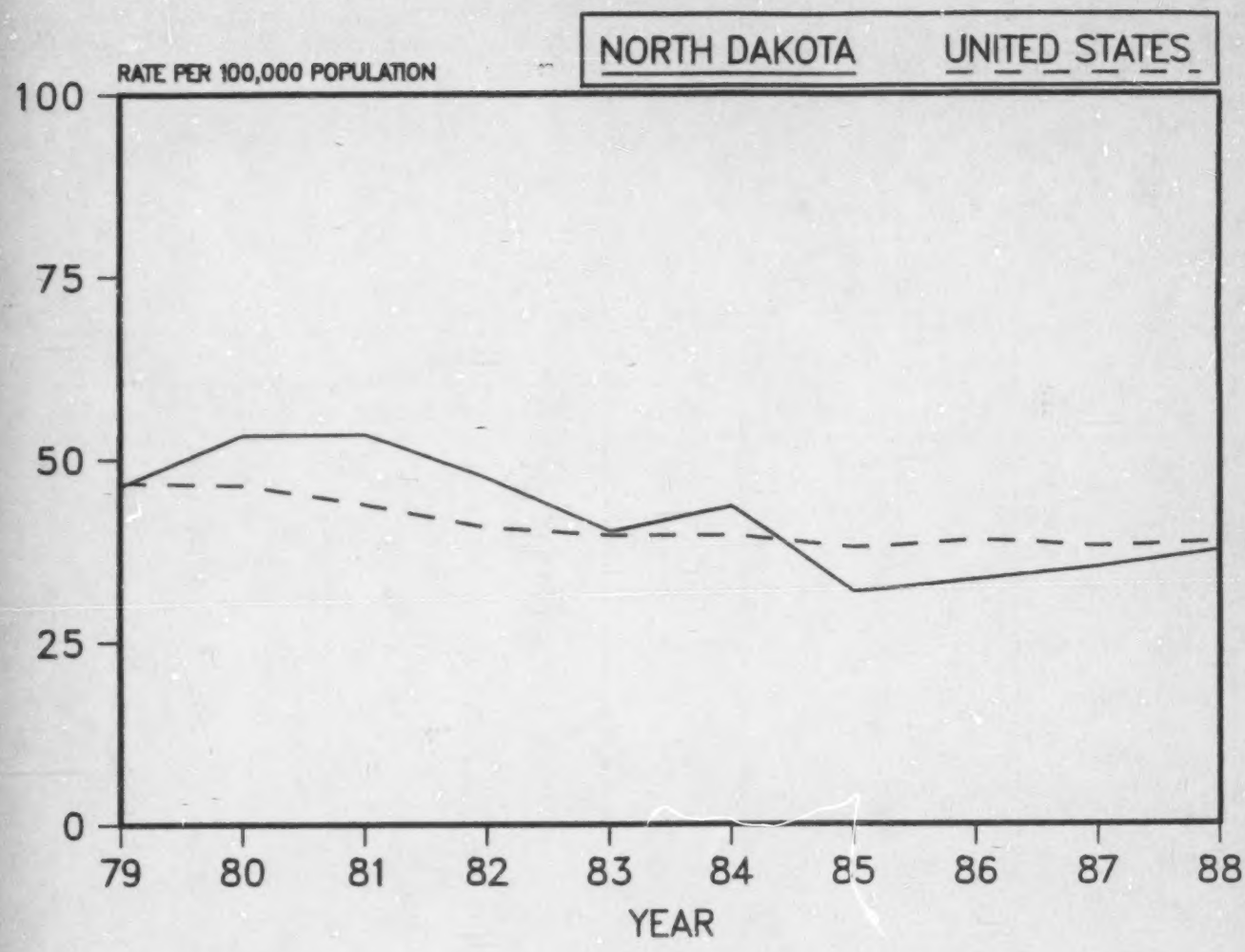
Accidental deaths among males were most frequent in the 15-24 age group. This age group accounted for nearly one-fourth of all male accidental deaths.

Generally, national and state accidental death rates fluctuated substantially during the 1979-1988 time period. In 1988 North Dakota's accidental death rate was slightly lower than the corresponding national rate (Figure 2.9).

Table 2.8
Resident Deaths Due to Accidents
by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	4	1	3	1	3	--	--
1-4 Years	8	5	3	3	2	2	1
5-14 Years	10	6	4	5	3	1	1
15-24 Years	54	40	14	35	14	5	--
25-34 Years	33	24	9	19	8	5	1
35-44 Years	18	14	4	12	3	2	1
45-54 Years	15	14	1	13	1	1	--
55-64 Years	12	11	1	10	1	1	--
65-74 Years	23	15	8	14	8	1	--
75-84 Years	46	25	21	23	19	2	2
85+ Years	28	17	11	17	11	--	--
Total	251	172	79	152	73	20	6

Figure 2.9
Resident Accident Death Rates
North Dakota and United States
1979-1988



Chronic Obstructive Pulmonary Disease

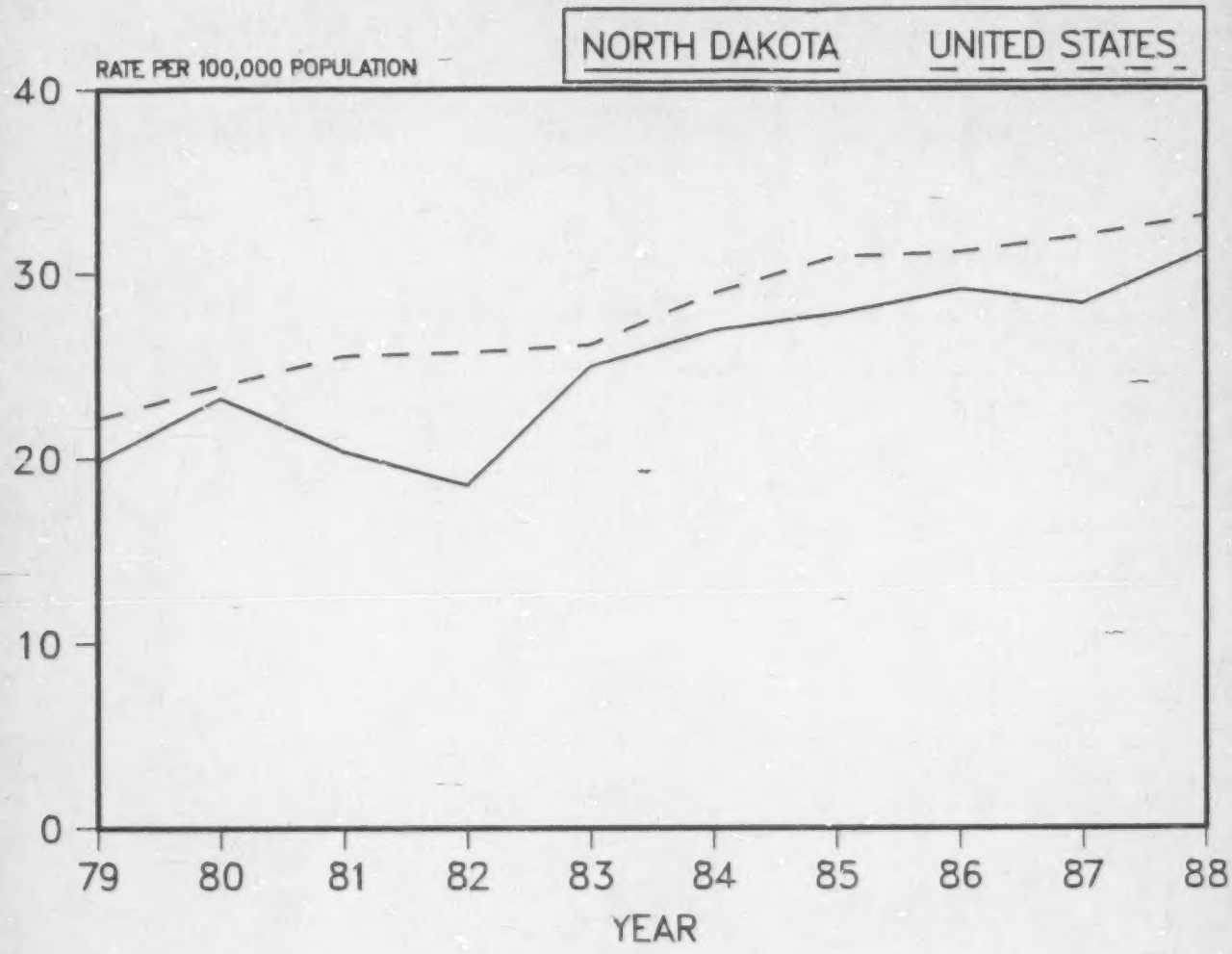
In 1988, 209 North Dakota residents died from chronic obstructive pulmonary disease (COPD). More than three-fourths of all COPD deaths were male. Substantial death differentials, regarding gender, were noted in nearly all age groupings.

During the 1979-1988 time period COPD death rates, both nationally and statewide, increased sharply. Generally, North Dakota rates have been lower than corresponding national COPD death rates (Figure 2.10).

Table 2.9
Resident Deaths Due to Chronic Obstructive Pulmonary Diseases and Allied Conditions by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	--	--	--	--	--	--	--
1-4 Years	1	1	--	1	--	--	--
5-14 Years	--	--	--	--	--	--	--
15-24 Years	--	--	--	--	--	--	--
25-34 Years	--	--	--	--	--	--	--
35-44 Years	1	--	1	--	1	--	--
45-54 Years	4	1	3	1	3	--	--
55-64 Years	19	10	9	10	8	--	1
65-74 Years	78	63	15	63	15	--	--
75-84 Years	70	60	10	59	10	1	--
85+ Years	36	22	14	22	14	--	--
Total	209	157	52	156	51	1	1

Figure 2.10
Resident Chronic Obstructive Pulmonary Disease Death Rates
North Dakota and United States
1979-1988



Influenza and Pneumonia

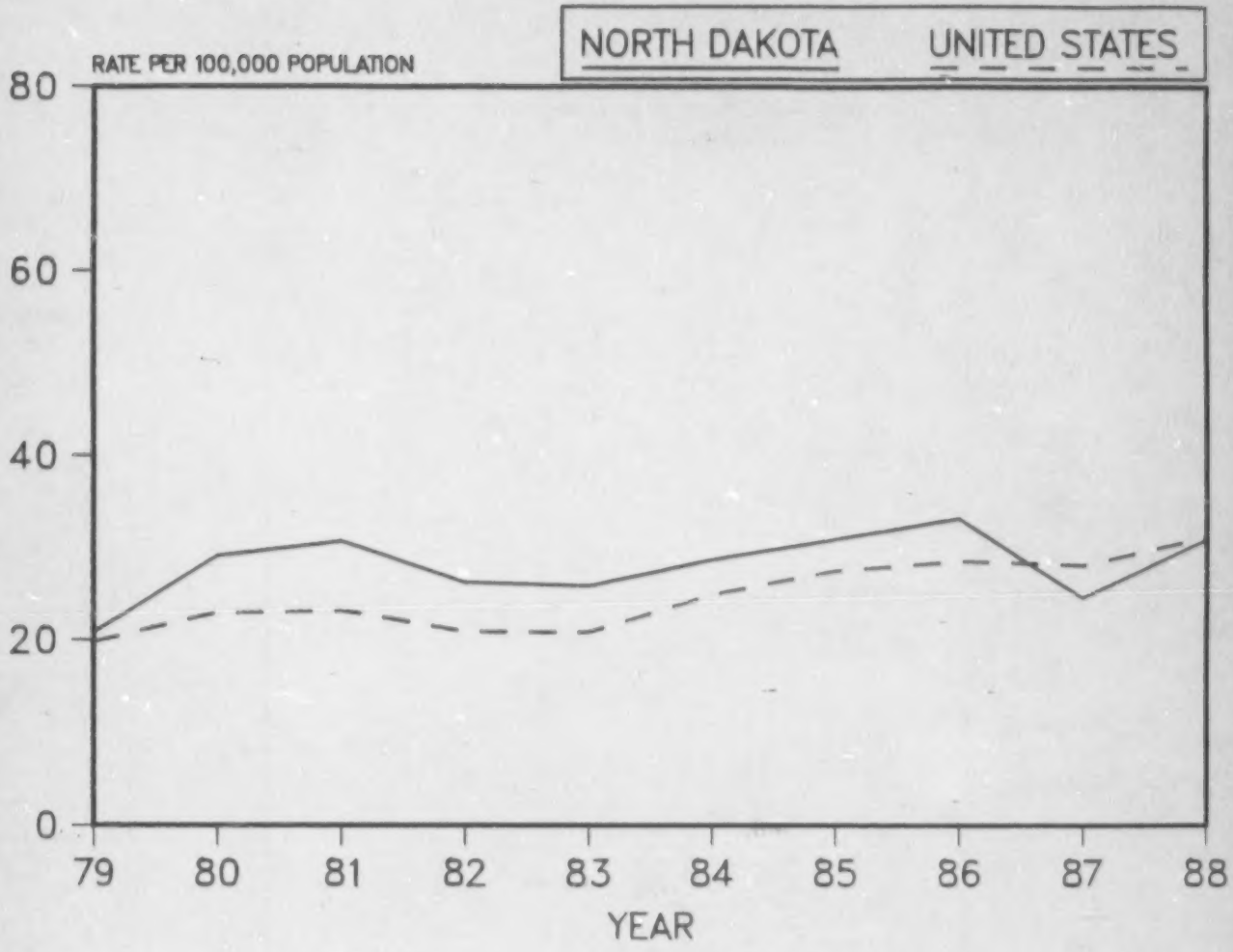
Nearly four percent of North Dakota resident deaths in 1988 was due to influenza and pneumonia. There were a total of 207 deaths of which 103 were male and 104 were female.

Since 1979 national and state influenza and pneumonia death rates have been erratic. In 1988 North Dakota reported a rate of 31.0, while a rate of 31.3 was recorded nationally (Figure 2.11).

Table 2.10
Resident Deaths Due to Influenza
and Pneumonia by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	2	2	--	2	--	--	--
1-4 Years	2	1	1	1	1	--	--
5-14 Years	--	--	--	--	--	--	--
15-24 Years	1	--	1	--	--	--	1
25-34 Years	1	1	--	1	--	--	--
35-44 Years	1	1	--	1	--	--	--
45-54 Years	3	1	2	1	2	--	--
55-64 Years	6	3	3	3	2	--	1
65-74 Years	24	14	10	14	10	--	--
75-84 Years	52	37	15	36	15	1	--
85+ Years	115	43	72	43	70	--	2
Total	207	103	104	102	100	1	4

Figure 2.11
Resident Influenza and Pneumonia Death Rates
North Dakota and United States
1979-1988



Diabetes

In 1988 diabetes mellitus was the cause of death for 118 North Dakota residents. Of those deaths, 61 were male while 57 were female.

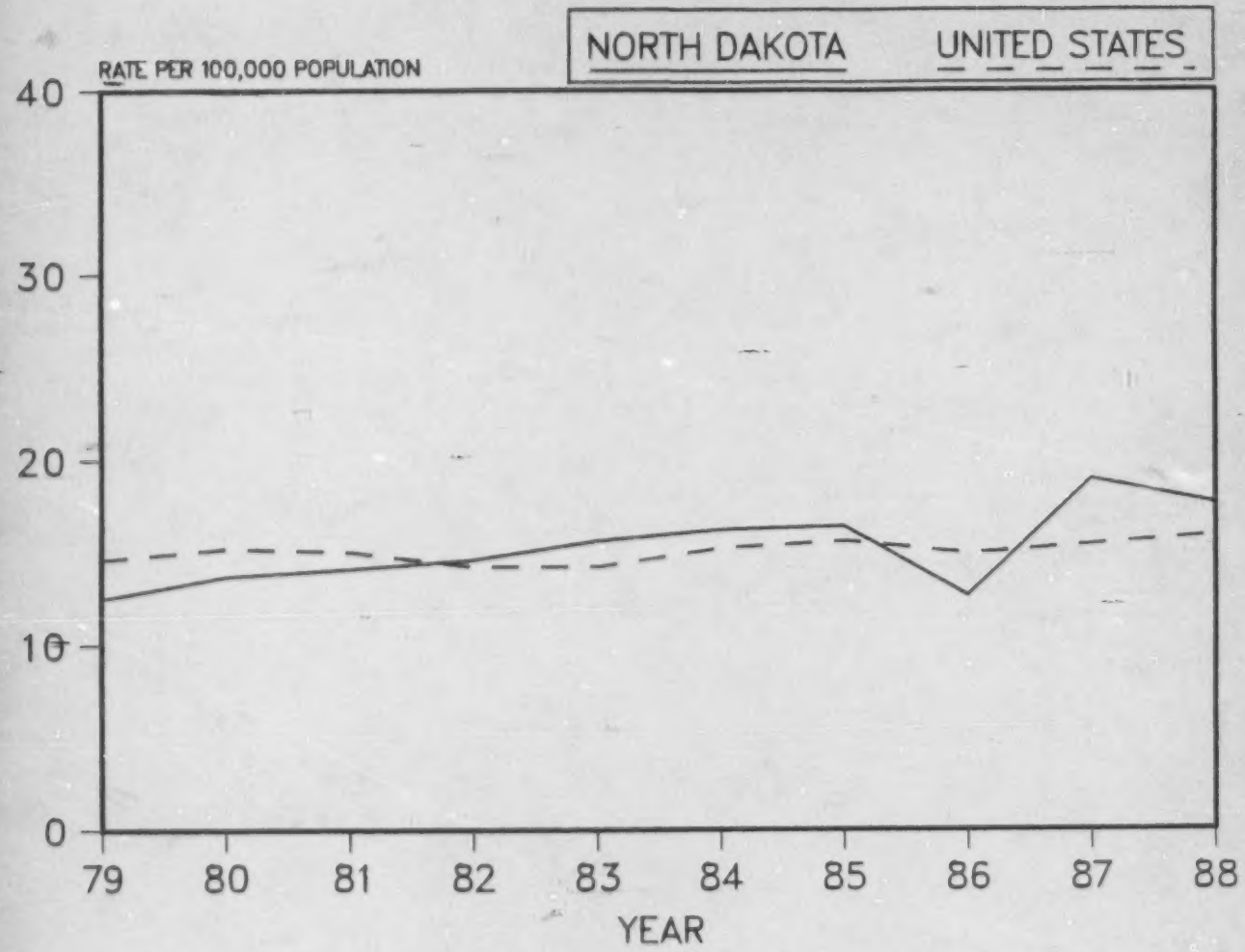
Diabetes deaths were more prevalent in the older age groups, with more than 80 percent of the state's resident diabetes deaths aged 65 and older.

During the 1979-1988 time period the diabetes death rates fluctuated both nationally and within North Dakota. In 1988 North Dakota reported a rate of 17.7, while a rate of 16.0 was experienced nationally (Figure 2.12).

Table 2.11
Resident Deaths Due to Diabetes
by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	--	--	--	--	--	--	--
1-4 Years	--	--	--	--	--	--	--
5-14 Years	--	--	--	--	--	--	--
15-24 Years	--	--	--	--	--	--	--
25-34 Years	1	1	--	1	--	--	--
35-44 Years	4	4	--	3	--	1	--
45-54 Years	6	4	2	3	2	1	--
55-64 Years	12	4	8	4	5	--	3
65-74 Years	26	18	8	17	8	1	--
75-84 Years	39	17	22	16	22	1	--
85+ Years	30	13	17	13	16	--	1
Total	118	61	57	57	53	4	4

Figure 2.12
Resident Diabetes Death Rates
North Dakota and United States
1979-1988



Atherosclerosis

A total of 101 North Dakota resident deaths were attributed to atherosclerosis in 1988, of which 45 were male and 56 female.

A majority (85.1 percent) of the atherosclerosis deaths occurred at ages 75 and older (Table 2.12).

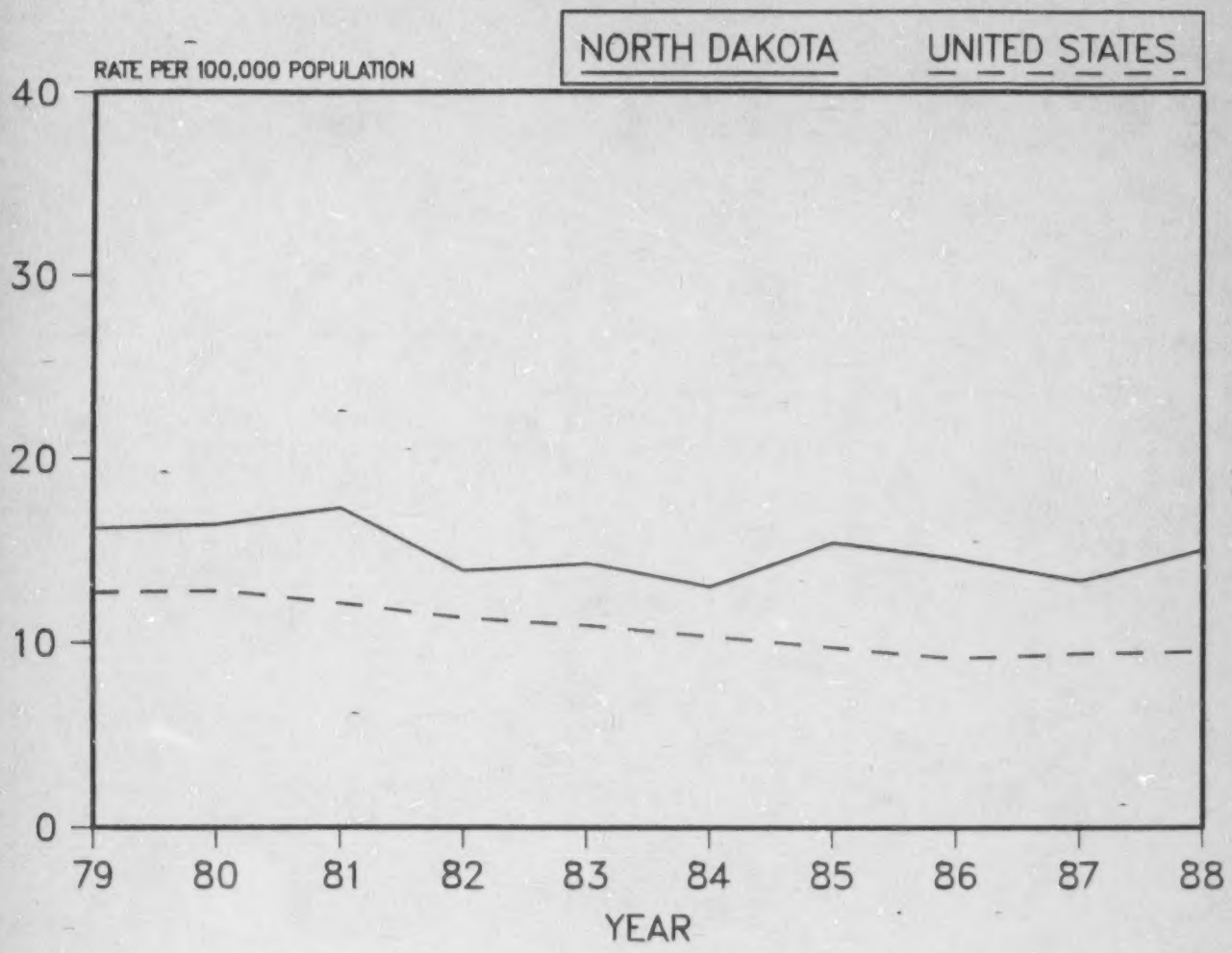
Although both state and national atherosclerosis death rates have declined slightly since 1979, generally state rates have been higher than corresponding national atherosclerosis rates (Figure 2.13).

Table 2.12
Resident Deaths Due to Atherosclerosis
by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	--	--	--	--	--	--	--
1-4 Years	--	--	--	--	--	--	--
5-14 Years	--	--	--	--	--	--	--
15-24 Years	--	--	--	--	--	--	--
25-34 Years	--	--	--	--	--	--	--
35-44 Years	--	--	--	--	--	--	--
45-54 Years	2	2	--	2	--	--	--
55-64 Years	2	2	--	2	--	--	--
65-74 Years	11	6	5	6	5	--	--
75-84 Years	27	13	14	13	13	--	1[(1)]
85+ Years	59	22	37	22	37	--	--
Total	101	45	56	45	55	--	1

[(1)] Includes One "Other" Race Female

Figure 2.13
Resident Atherosclerosis Death Rates
North Dakota and United States
1979-1988



Suicide

There were a total of 75 suicides in 1988, making suicide the ninth leading cause of death for North Dakota residents.

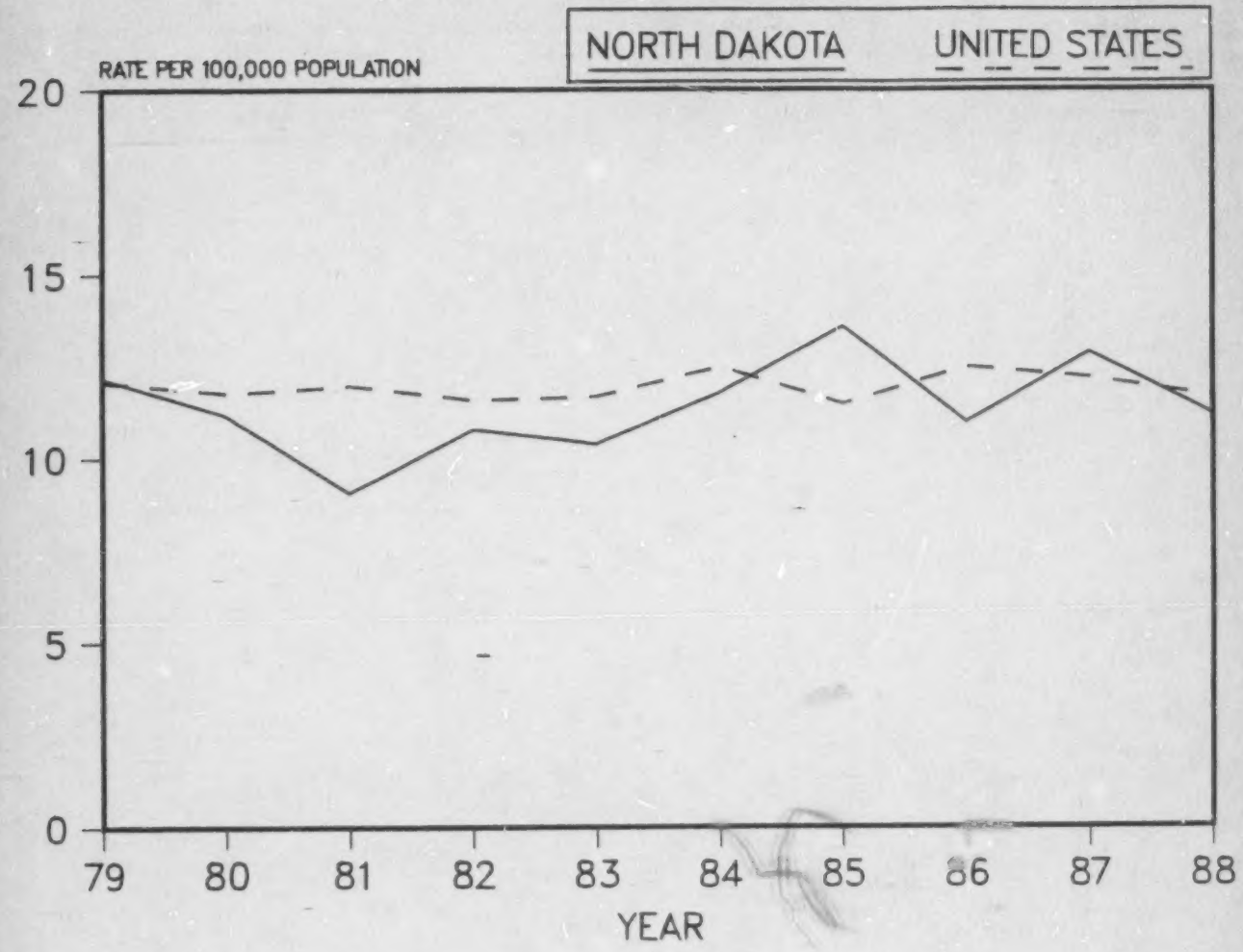
The number of male suicide deaths in 1988 was four times that of corresponding female deaths. In nearly all age cohorts male suicides were substantially larger than corresponding female suicides (Table 2.13).

Generally, both state and national suicide death rates fluctuated considerably during the 1979-1988 time period. Although no clear-cut trend regarding suicide death rates has been formulated, national suicide death rates have generally been higher than corresponding state rates. In 1988 the state rate was 11.2 compared with 11.7 reported nationwide (Figure 2.14).

Table 2.13
Resident Deaths Due to Suicide
by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	--	--	--	--	--	--	--
1-4 Years	--	--	--	--	--	--	--
5-14 Years	3	1	2	--	2	1	--
15-24 Years	17	12	5	12	3	--	2
25-34 Years	12	10	2	9	1	1	1
35-44 Years	15	12	3	10	3	2	--
45-54 Years	8	6	2	6	2	--	--
55-64 Years	6	6	--	6	--	--	--
65-74 Years	9	8	1	8	1	--	--
75-84 Years	5	5	--	5	--	--	--
85+ Years	--	--	--	--	--	--	--
Total	75	60	15	56	12	4	3

Figure 2.14
Resident Suicide Death Rates
North Dakota and United States
1979-1988



Other Diseases of the Arteries

Deaths due to other diseases of the arteries numbered 67 among North Dakota residents. Of these deaths, 35 were male while 32 were female.

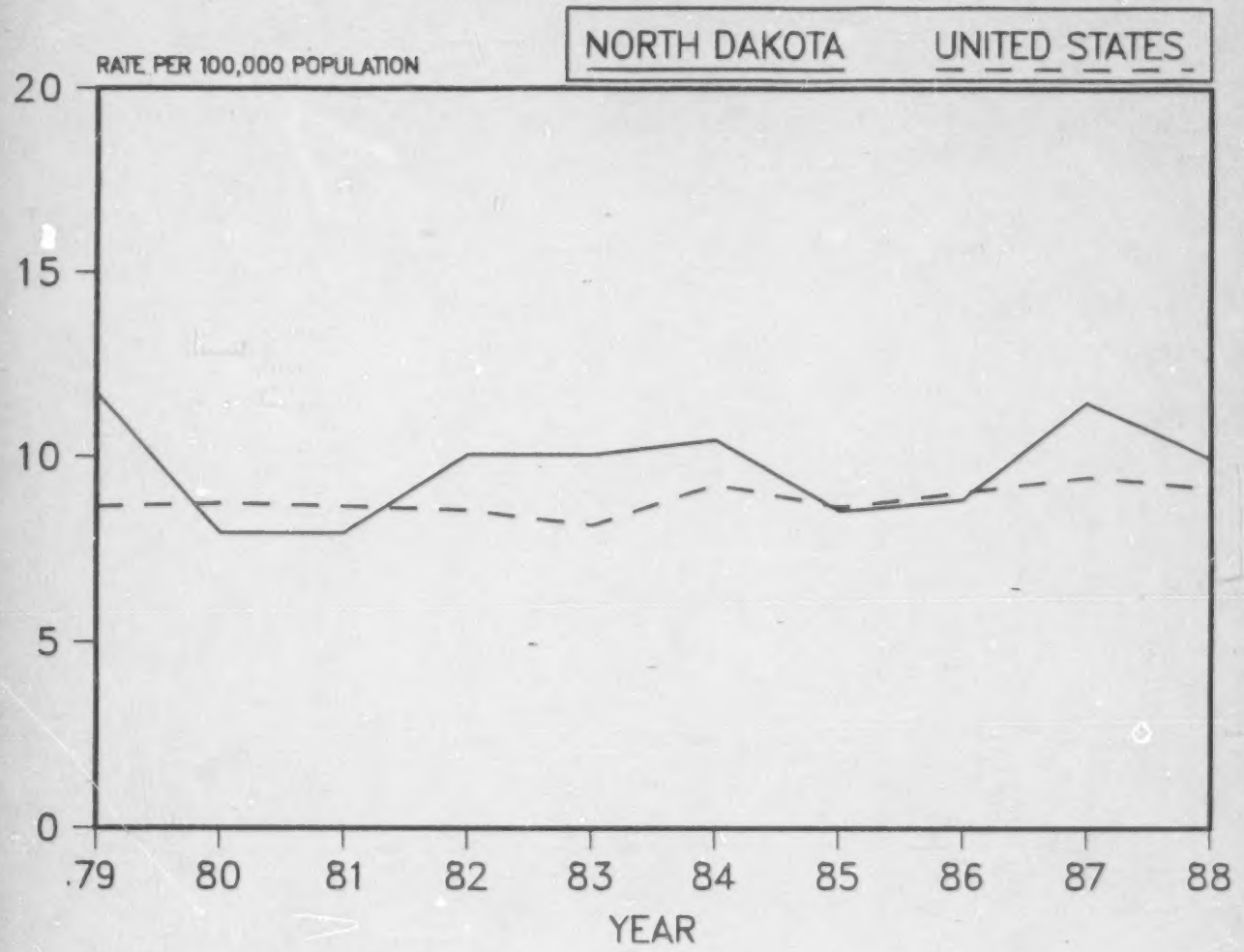
Although state and national death rate trends have been similar, North Dakota's rate has been generally higher than the corresponding national rate (Figure 2.15).

Table 2.14
Resident Deaths Due to Other Diseases of the Arteries
by Age, Race, and Sex
North Dakota, 1988

Age	All Races			White		Native American	
	Total	Male	Female	Male	Female	Male	Female
Under 1 Year	--	--	--	--	--	--	--
1-4 Years	--	--	--	--	--	--	--
5-14 Years	--	--	--	--	--	--	--
15-24 Years	--	--	--	--	--	--	--
25-34 Years	--	--	--	--	--	--	--
35-44 Years	--	--	--	--	--	--	--
45-54 Years	--	--	--	--	--	--	--
55-64 Years	6	3	3	2	3	1(1)	--
65-74 Years	15	11	4	11	4	--	--
75-84 Years	22	11	11	11	11	--	--
85+ Years	24	10	14	10	14	--	--
Total	67	35	32	34	32	1	--

(1) Includes One "Other" Race Male

Figure 2.15
Resident Other Diseases of the Arteries Death Rates
North Dakota and United States
1979-1988



Infant Deaths

Of the 5,664 deaths to North Dakota residents in 1988, 107 occurred to individuals less than one year of age (Figure 2.16). Since 1960 the number of infant deaths within the state has declined 74.2 percent. The largest and smallest number of infant deaths were reported in 1960 and 1986 and 1987, respectively. Nationally, the number of infant deaths estimated in 1988 was 38,610, 65.2 percent less than the 110,873 reported in 1960 (Table 2.15).

Since 1960 the rate of death for infants has also dropped considerably. In 1960 there were 24.8 North Dakota resident infant deaths per 1,000 live births, compared with 10.6 infant deaths per 1,000 live births experienced in 1988 (Figure 2.17).

In 1988, however, both infant death frequencies and rates were higher in North Dakota than frequencies and rates experienced in 1987.

Figure 2.16
Resident Infant Deaths
North Dakota, 1960-1988

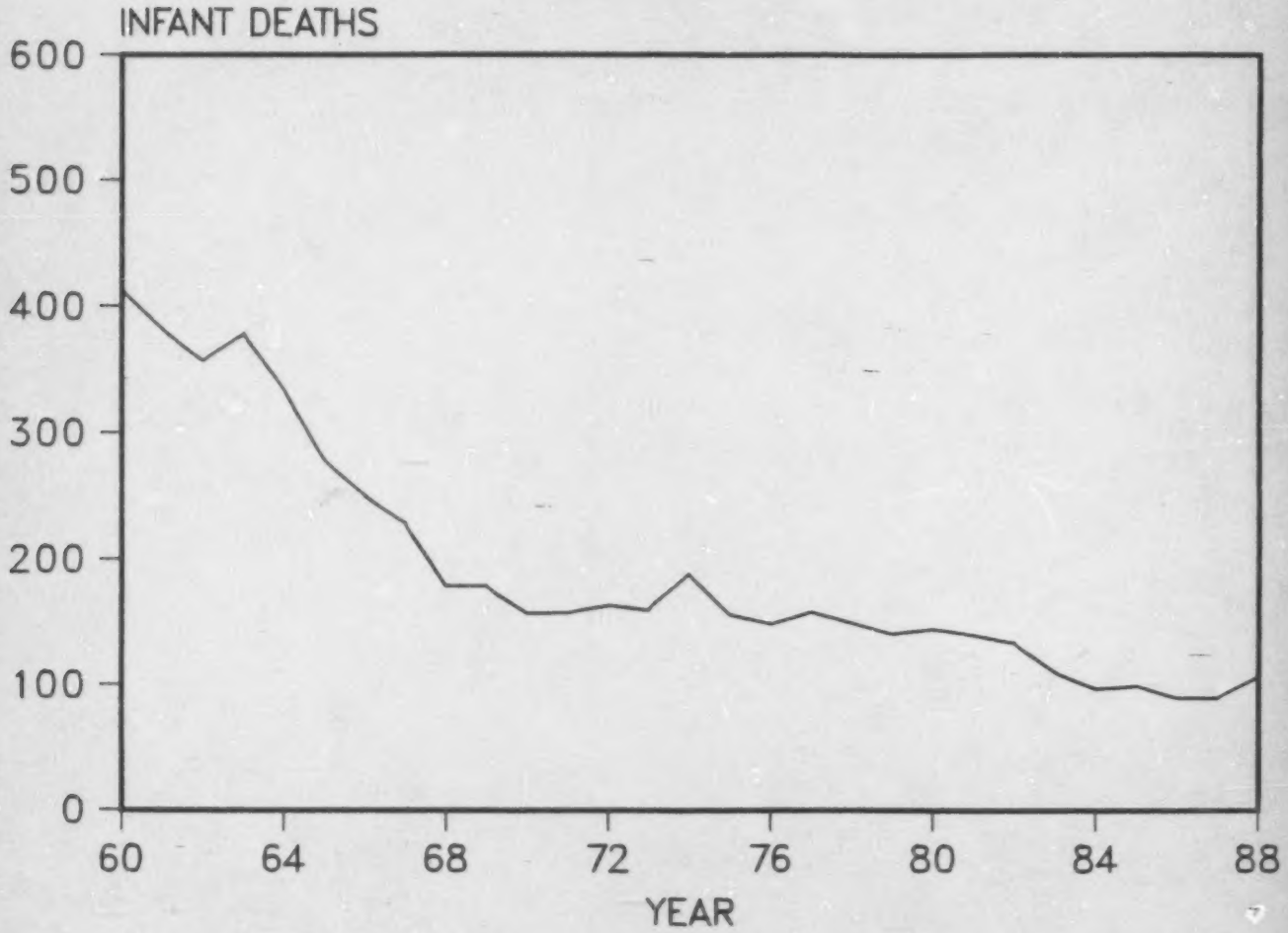
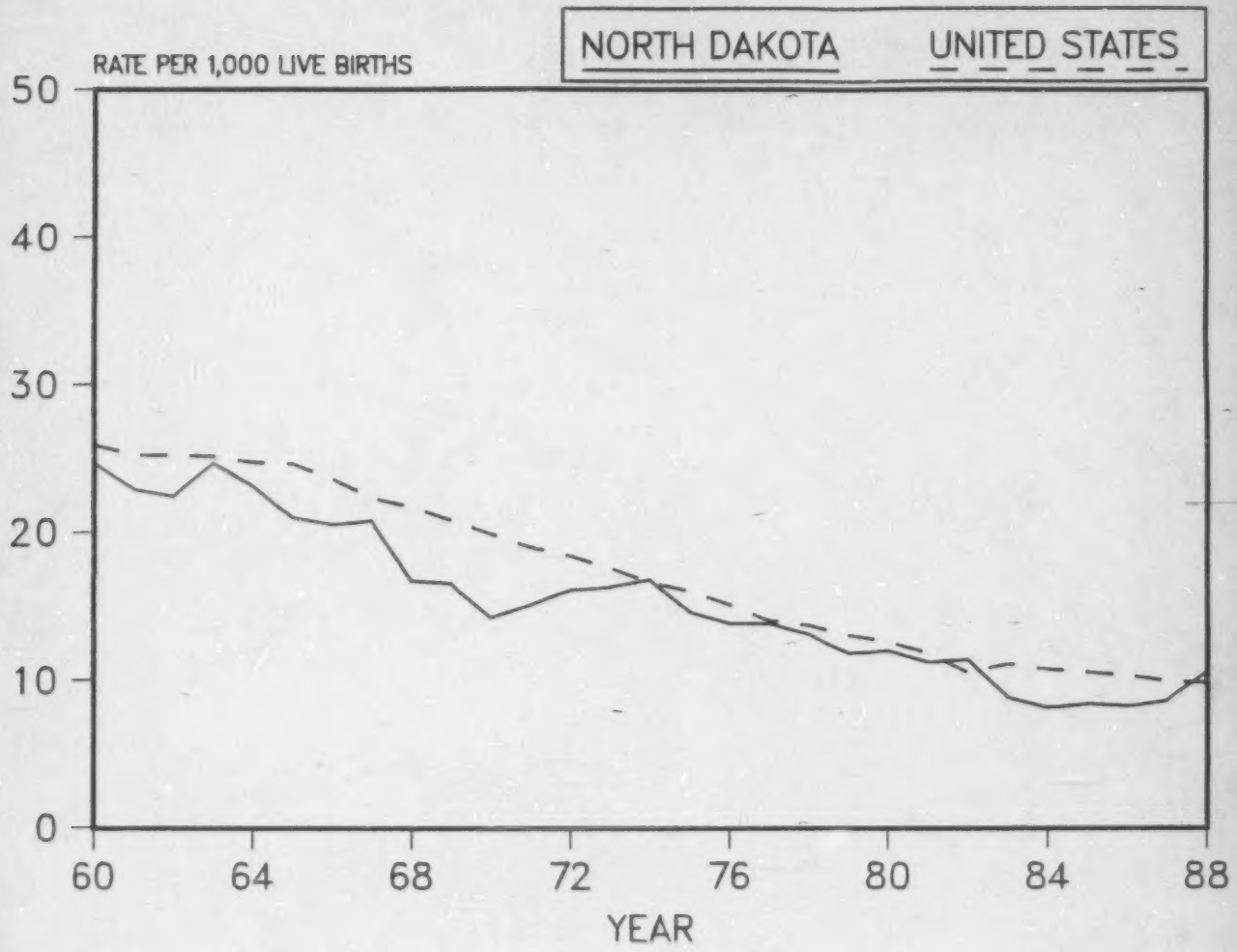


Table 2.15
Resident Infant Deaths and Infant Mortality Rates
North Dakota and United States
1960-1988

Year	United States		North Dakota	
	Number	Rate	Number	Rate
1960	110,873	26.0	414	24.8
1961	107,956	25.3	382	23.0
1962	105,479	25.3	357	22.5
1963	103,390	25.2	379	24.8
1964	99,783	24.8	334	23.2
1965	92,866	24.7	279	21.1
1966	85,516	23.7	251	20.6
1967	79,028	22.4	229	20.9
1968	76,263	21.8	179	16.8
1969	75,073	20.9	179	16.6
1970	74,667	20.0	157	14.3
1971	67,981	19.1	158	15.2
1972	60,182	18.5	164	16.2
1973	55,581	17.7	160	16.4
1974	52,776	16.7	169	16.9
1975	50,525	16.1	156	14.7
1976	48,265	15.2	149	13.9
1977	46,975	14.1	159	13.9
1978	45,945	13.8	150	13.2
1979	45,665	13.1	141	11.9
1980	45,526	12.7	145	12.1
1981	43,305	11.9	140	11.3
1982	42,401	11.5	134	10.6
1983	40,527	11.2	110	8.9
1984	39,580	10.8	97	8.2
1985	40,030	10.6	100	8.5
1986	38,891	10.4	90	8.3
1987	38,380[(1)]	10.0	90	8.7
1988	38,610[(1)]	9.9	107	10.6

[(1)] U.S. Estimate

Figure 2.17
Resident Infant Death Rates
North Dakota and United States
1960-1988



During the period 1960-1988, North Dakota's infant death rates were generally below the corresponding national rate. In 1988 the national infant mortality rate was estimated at 9.9, slightly lower than the 10.6 experienced in North Dakota.

Approximately 54 percent of all infant deaths occurred within the first month of life in 1988, with about 39 percent in the first week. These proportions were 74.5 and 63.8 in 1979, respectively (Table 2.16). Figure 2.18 portrays infant death rates at age of death.

Infant mortality rates have historically been shown to vary with age of the mother and the race of the child. Infant mortality rates by age of mother and race of child are provided in Figure 2.19 and Table 2.17. These data are obtained from a file of merged live births and infant death information.

Table 2.16
Resident Infant Deaths and
Mortality Rates by Infant's Age at Death
North Dakota, 1979-1988

Year	Total Infant Deaths		Age at Death							
			Under 1 Day		1-6 Days		7-27 Days		28 Days-1 Year	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1979	141	11.9	58	4.9	32	2.7	15	1.3	36	3.0
1980	145	12.1	44	3.7	27	2.3	21	1.8	53	4.4
1981	140	11.3	37	3.0	28	2.3	23	1.9	52	4.2
1982	134	10.6	50	4.0	24	1.9	12	0.9	48	3.8
1983	110	8.9	42	3.4	25	2.0	9	0.7	34	2.7
1984	97	8.2	30	2.5	13	1.1	11	0.9	43	3.6
1985	100	8.5	33	2.8	16	1.4	14	1.2	37	3.2
1986	90	8.3	32	3.0	6	0.6	5	0.5	47	4.3
1987	90	8.7	32	3.1	13	1.3	5	0.5	40	3.9
1988	107	10.6	23	2.3	19	1.9	16	1.6	49	4.8

Figure 2.18
Resident Infant Death Rates by Age at Death
North Dakota, 1979-1988

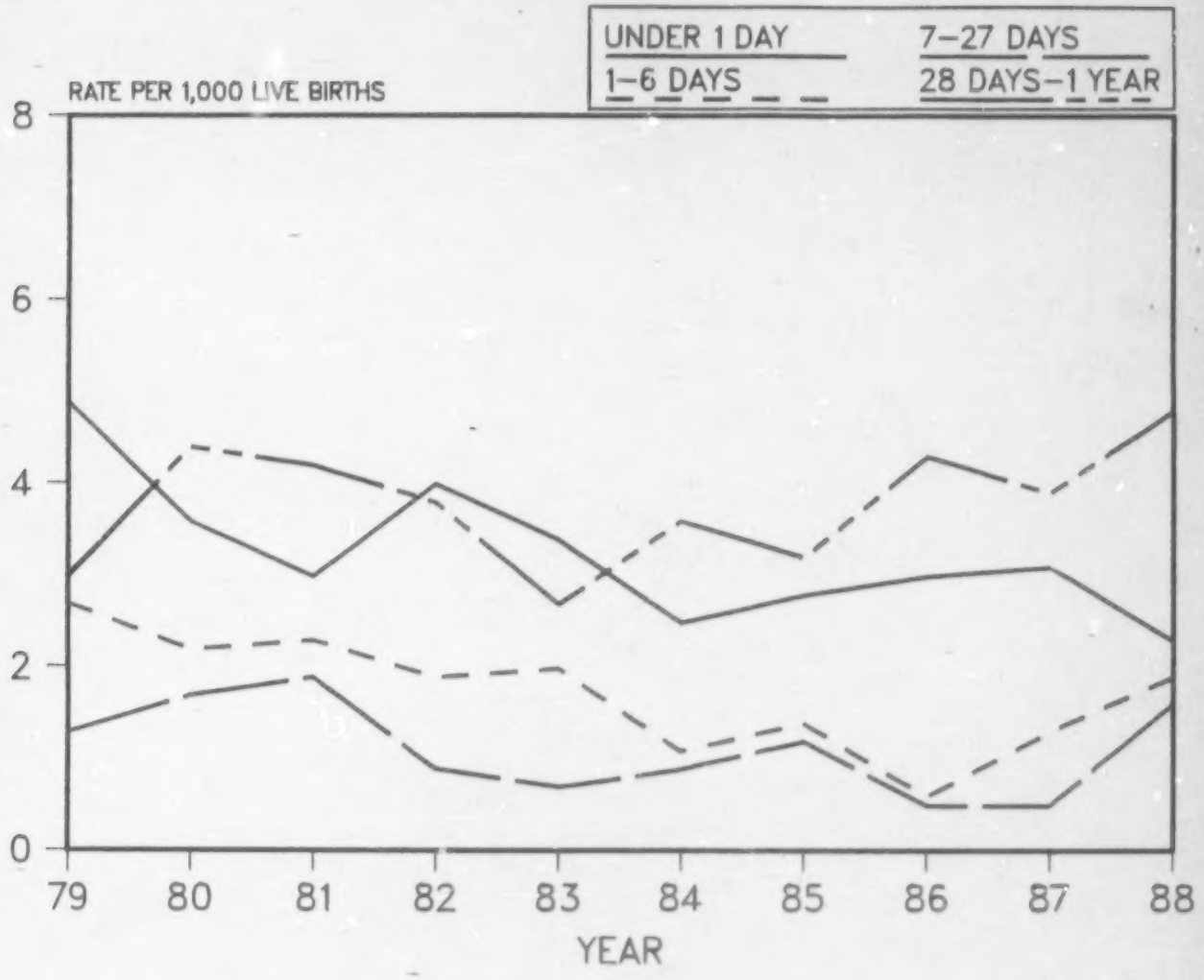


Figure 2.19
Resident Infant Death Rates by Age of Mother
North Dakota, 1988

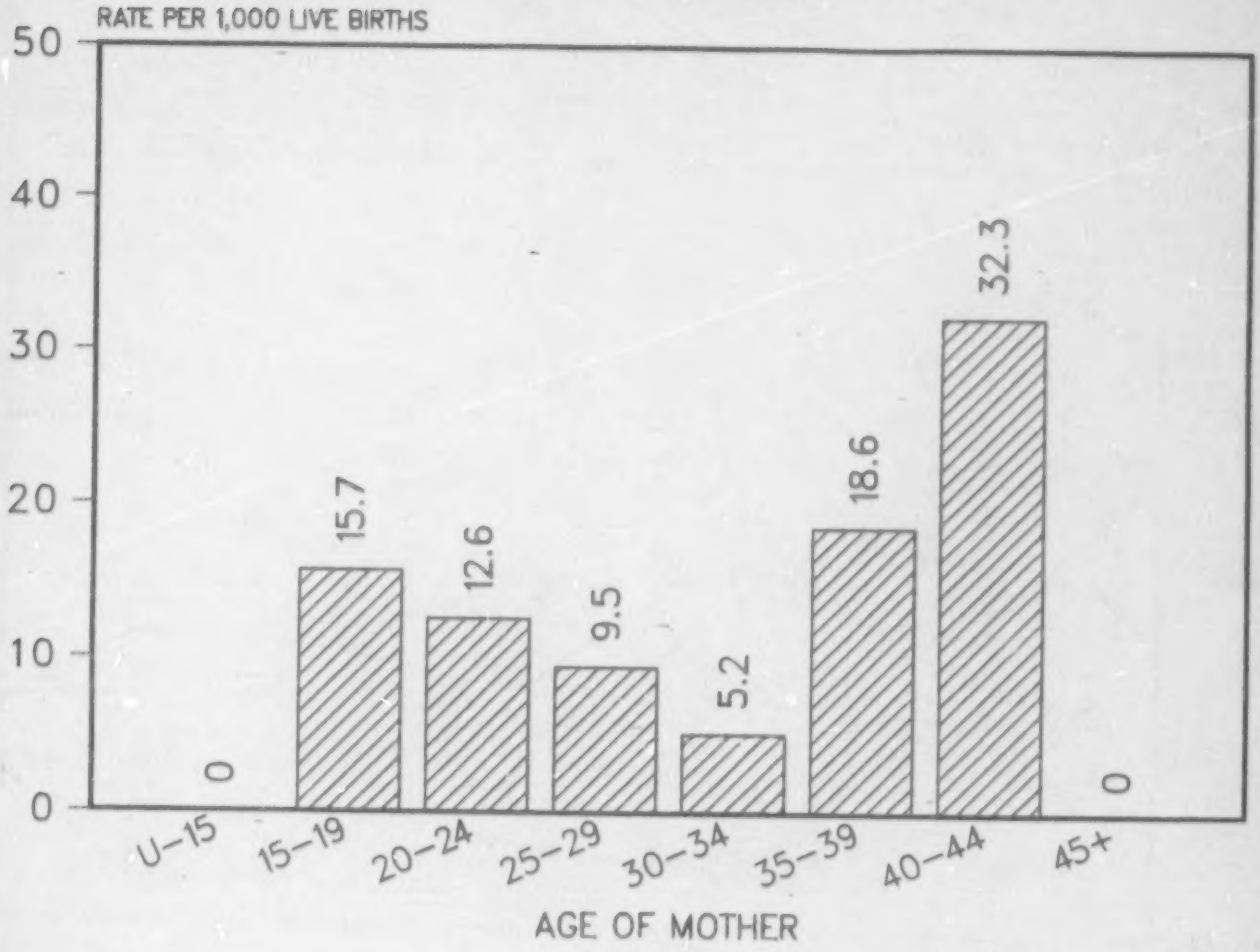


Table 2.17
Resident Infant Deaths and Infant Death Rates
by Age of Mother and Race of Infant
North Dakota, 1988

Age of Mother	Race of Infant							
	All Races		White		Native American		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Under 15 Years	--	--	--	--	--	--	--	--
15-19 Years	12	15.7	7	12.8	5	24.8	--	--
20-24 Years	35	12.6	29	12.4	6	16.5	--	--
25-29 Years	36	9.5	32	9.3	4	13.9	--	--
30-34 Years	11	5.2	11	5.6	--	--	--	--
35-39 Years	11	18.6	10	18.7	1	22.7	--	--
40-44 Years	2	32.3	1	17.9	1	200.0	--	--
45 Years and Over	--	--	--	--	--	--	--	--
Total	107	10.6	90	10.2	17	16.6	0	0.0

Infant death rates displayed somewhat of a parabolic relationship with mother's age. These rates were higher for infants born to younger and older mothers. In addition, Native American infants had higher infant mortality rates than those of white and other race infants.

Table 2.18 and Figure 2.20 show the variation in infant death rates according to number of prenatal visits. The highest infant death rates were to mothers having no visits (65.6) and 1-4 prenatal visits (28.5).

Table 2.19 and Figure 2.21 depict infant death rates as they relate to trimester prenatal care began. Infants whose mothers had no prenatal care experienced the highest infant death rate, 65.6.

The majority of infant deaths were attributable to three major causes: "congenital anomalies" (31 deaths), "SIDS" (23 deaths), and "respiratory distress syndrome" (11 deaths) (Table 2.20 and Figure 2.22).

Table 2.18
Resident Infant Deaths and Infant Death Rates
by Prenatal Visits and Race of Mother
North Dakota, 1988

Number of Prenatal Visits	Race of Mother							
	All Races		White		Native American		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
None	4	65.6	4	105.3	--	--	--	--
1-4	12	28.5	8	32.7	4	23.0	--	--
5-9	44	12.5	38	12.0	6	19.2	--	--
10-14	38	7.2	31	6.4	7	21.9	--	--
15-19	2	3.0	2	3.3	--	--	--	--
20+	--	--	--	--	--	--	--	--
Not Stated	7	--	7	--	--	--	--	--
Total	107	10.6	90	9.9	17	19.4	0	0.0

Table 2.19
Resident Infant Deaths and Infant Death Rates
by Trimester Prenatal Care Began and Race of Mother
North Dakota Infants, 1988

Trimester Prenatal Care Began	Race of Mother							
	All Races		White		Native American		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
None	4	65.6	4	105.3	--	--	--	--
First	68	8.4	57	7.6	11	21.1	--	--
Second	24	16.0	21	17.0	3	13.1	--	--
Third	2	9.3	1	7.3	1	13.3	--	--
Not Stated	9	--	7	--	2	--	--	--
Total	107	10.6	90	9.9	17	19.4	0	0.0

Figure 2.20
Resident Infant Death Rates by Prenatal Visits
North Dakota, 1988

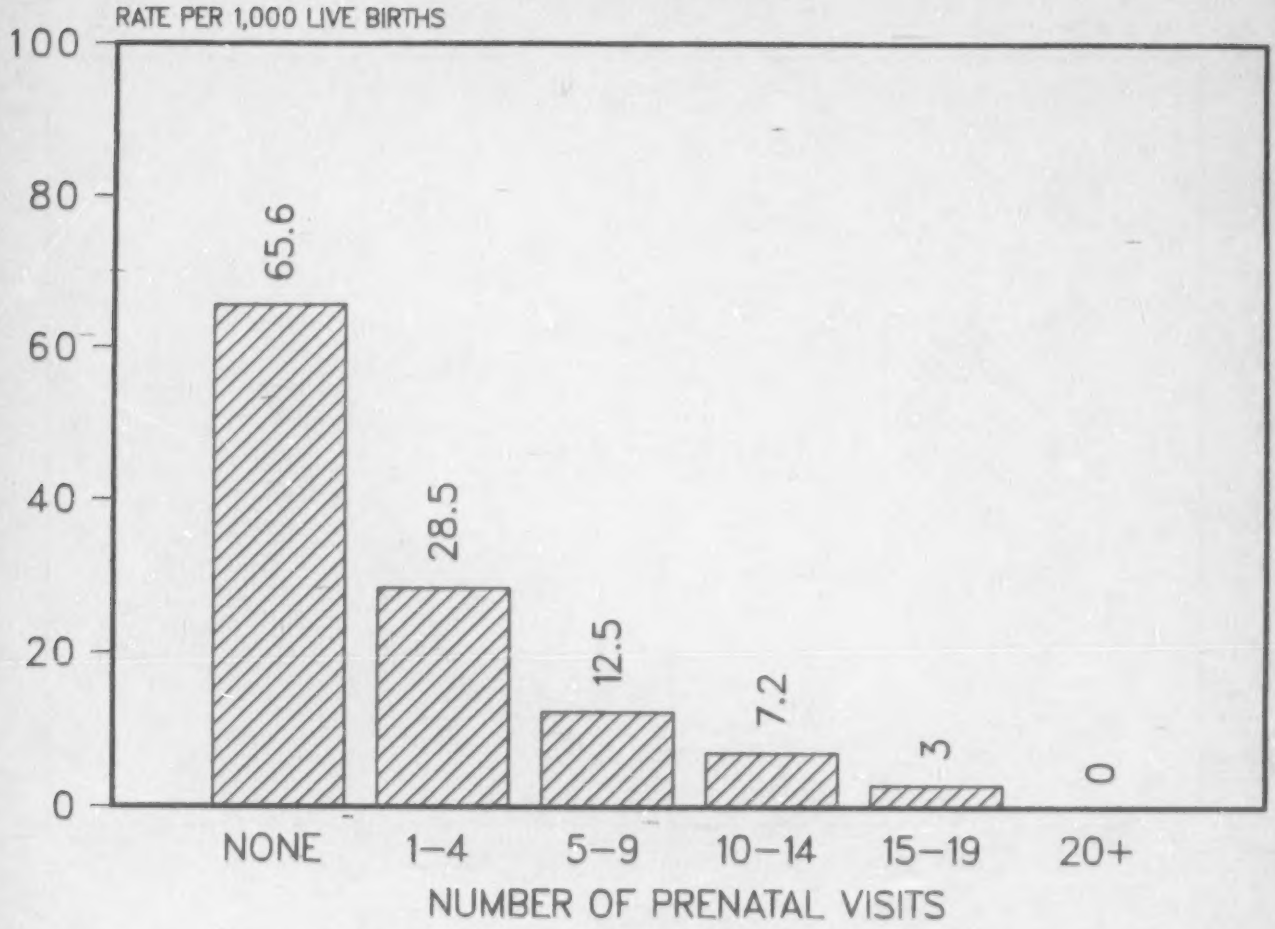


Figure 2.21
Resident Infant Death Rates
by Trimester Prenatal Care Began
North Dakota, 1988

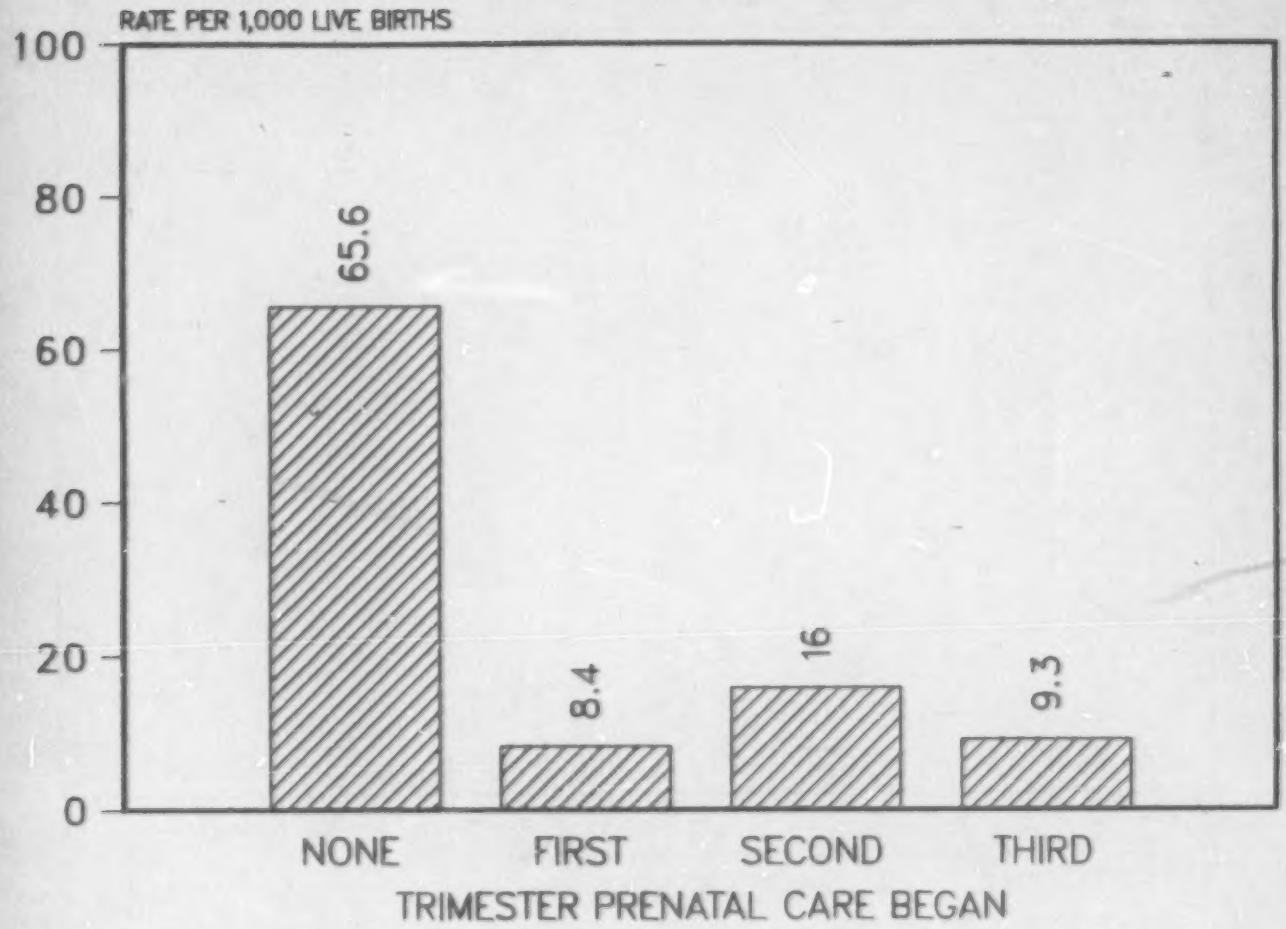
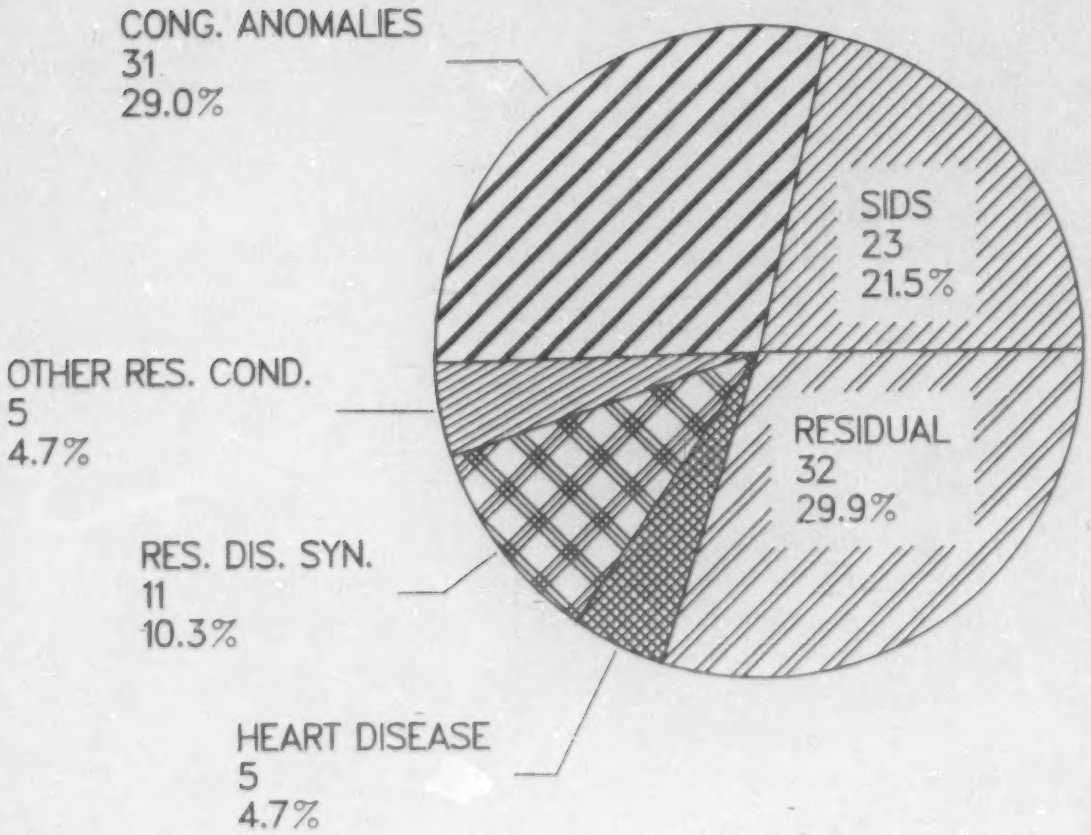


Table 2.20
Resident Infant Deaths by Cause of Death
North Dakota, 1988

ICDA Code	Cause of Death	Frequency
191	Malignant Neoplasm of the Brain	1
270-279	Other Metabolic and Immunity Disorders	2
320-326	Inflammatory Diseases of the Central Nervous System	1
330-337	Hereditary and Degenerative Diseases of the Central Nervous System	2
343	Infantile Cerebral Palsy	1
390-398, 402 404-429	Diseases of the Heart	5
430-438	Cerebrovascular Disease	1
460-466	Acute Respiratory Infections	1
480-487	Influenza and Pneumonia	2
740-759	Congenital Anomalies	31
761	Fetus or Newborn Affected by Maternal Complications of Pregnancy	1
765	Disorders Relating to Short Gestation and Unspecified Low Birth Weight	4
767	Birth Trauma	1
768	Intrauterine Hypoxia and Birth Asphyxia	2
769	Respiratory Distress Syndrome	11
770	Other Respiratory Conditions of Fetus or Newborn	5
771	Infections Specific to the Perinatal Period	2
772	Fetal and Neonatal Hemorrhage	1
776	Hematological Disorders of the Fetus and Newborn	1
777	Perinatal Disorders of the Digestive System	2
778	Conditions Involving the Integument and Temperature Regulation of Fetus and Newborn	1
779	Other Ill-Defined Conditions Originating in the Perinatal Period	1
798	Sudden Death, Cause Unknown	23
E810-E819	Motor Vehicle Traffic Accidents	1
E890-E899	Accidents Caused by Fire and Flame	1
E900-E909	Accidents Due to Natural and Environmental Factors	1
E910-E915	Accidents Caused by Submersion, Suffocation, and Foreign Bodies	1
E960-E969	Homicide and Injury Purposely Inflicted by Other Persons	1
	Total	107

Figure 2.22
Resident Infant Deaths by Cause of Death
North Dakota, 1988



Fetal Deaths

In 1988, 65 resident fetal deaths were reported in North Dakota. The largest and smallest corresponding number of fetal deaths were experienced in 1961 and 1987, respectively (Figure 2.23 and Table 2.21).

Since 1960 the fetal death ratio, which relates fetal deaths to live births, has generally been declining both nationally and within North Dakota. The largest reported state ratio was 13.8 experienced in 1966, while the smallest corresponding ratio was 5.3 reported in 1985 and 1987 (Figure 2.24 and Table 2.21).

Figure 2.23
Resident Fetal Deaths
North Dakota, 1960-1988

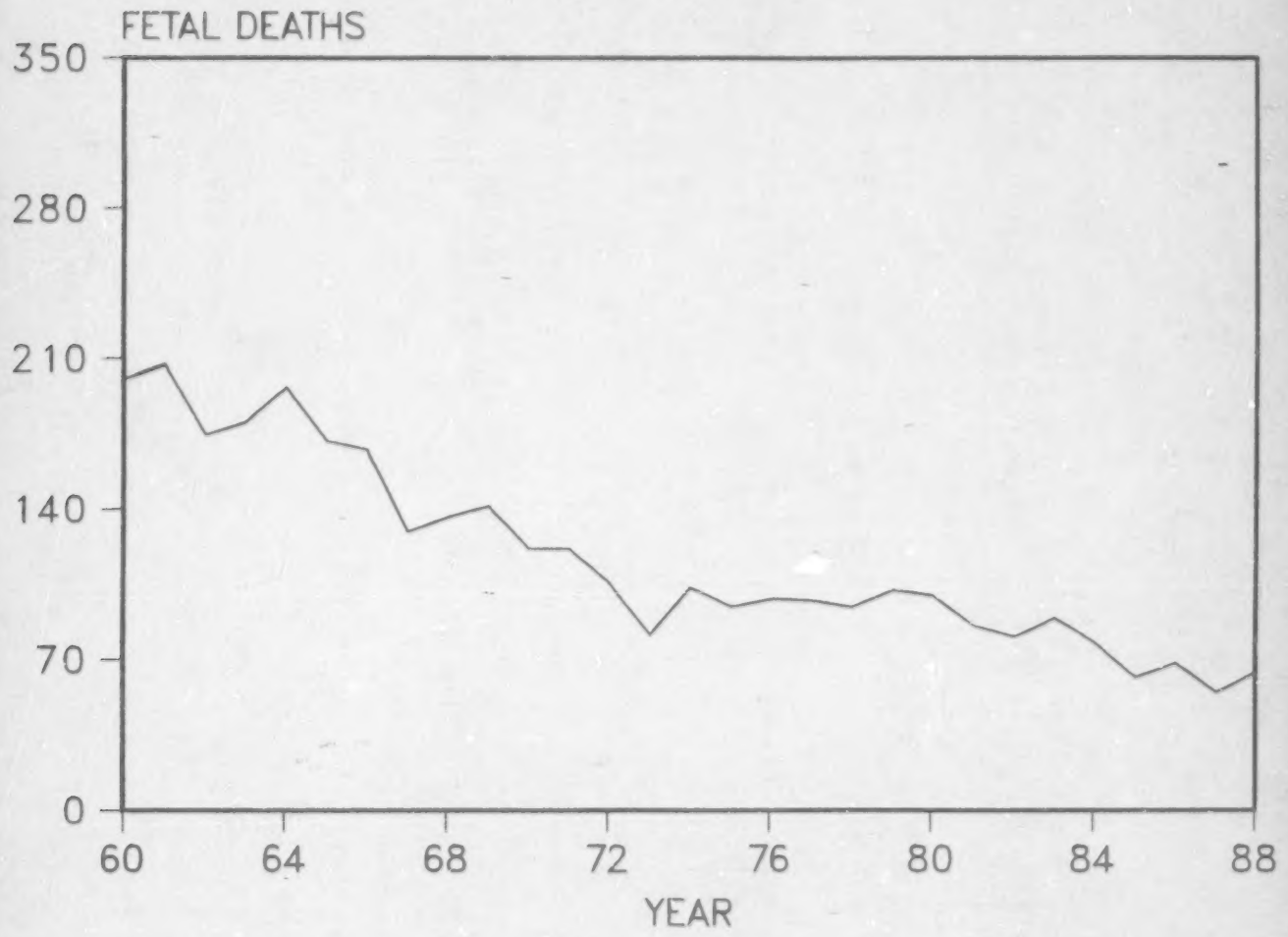
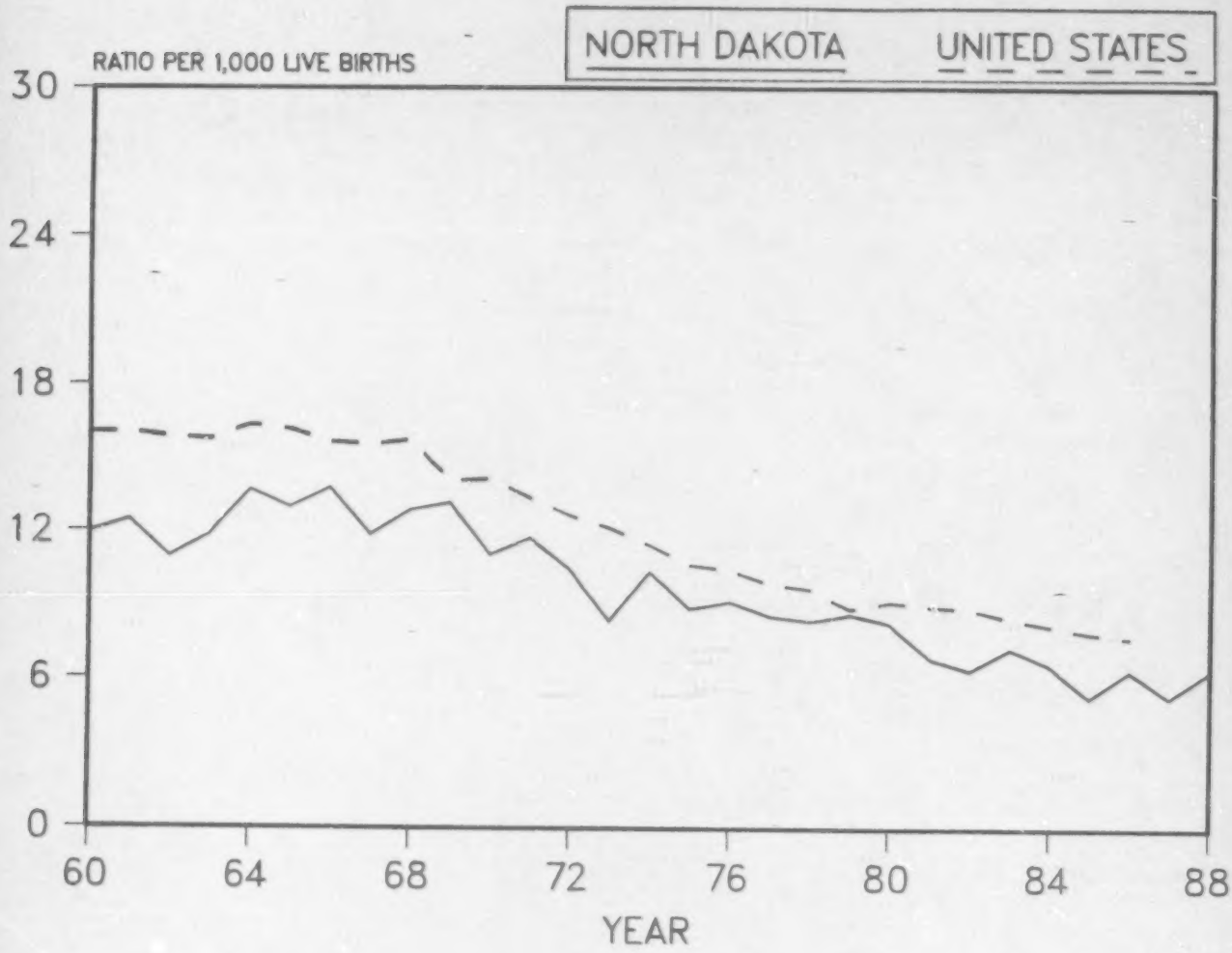


Table 2.21
Resident Fetal Deaths and Fetal Death Ratios
North Dakota and United States
1960-1988

Year	United States		North Dakota	
	Fetal Deaths	Fetal Death Ratios	Fetal Deaths	Fetal Death Ratios
1960	68,480	16.1	201	12.0
1961	68,767	16.1	208	12.5
1962	66,421	15.9	175	11.0
1963	64,640	15.8	181	11.9
1964	65,931	16.4	197	13.7
1965	60,859	16.2	172	13.0
1966	56,637	15.7	168	13.8
1967	54,934	15.6	130	11.9
1968	55,293	15.8	137	12.9
1969	50,749	14.1	142	13.2
1970	52,961	14.2	122	11.1
1971	47,818	13.4	122	11.8
1972	41,380	12.7	106	10.5
1973	38,309	12.2	82	8.4
1974	36,281	11.5	104	10.4
1975	33,796	10.7	95	8.9
1976	33,111	10.5	99	9.2
1977	33,053	9.9	98	8.6
1978	32,301	9.7	95	8.4
1979	30,969	8.9	103	8.7
1980	33,353	9.2	100	8.3
1981	32,596	9.0	86	6.9
1982	32,694	8.9	81	6.4
1983	30,752	8.5	90	7.3
1984	30,099	8.2	78	6.6
1985	29,661	7.9	62	5.3
1986	28,972	7.7	69	6.4
1987	--(1)	--	55	5.3
1988	--(1)	--	65	6.4

(1) Not Available

Figure 2.24
Resident Fetal Death Ratios
North Dakota and United States
1960-1988



Causes of Fetal Deaths

A classification of fetal deaths by underlying cause is contained in Table 2.22. Due to a relatively large number of deaths allocated to "other and ill-defined conditions" (30.8 percent), caution should be used when attempting to draw specific inferences regarding cause of death.

In 1988 nearly one-half of the fetal deaths were attributed to one general condition, "complications of the placenta, cord, and membranes" (28 fetal deaths).

Table 2.22
Resident Fetal Deaths by Cause of Death
North Dakota, 1988

ICD Code	Cause of Death	Frequency
741	Spina Bifida	1
759	Other and Unspecified Congenital Anomalies	1
760	Fetus Affected by Maternal Conditions Which May be Unrelated to Present Pregnancy	5
761	Fetus Affected by Maternal Complications of Pregnancy	5
762	Fetus Affected by Complications of Placenta, Cord, and Membranes	28
765	Disorders Relating to Short Gestation and Unspecified Low Birth Weight	3
768	Intrauterine Hypoxia and Birth Asphyxia	1
769	Respiratory Distress Syndrome	1
779	Other and Ill-Defined Conditions Originating in the Perinatal Period	20
	Total	65

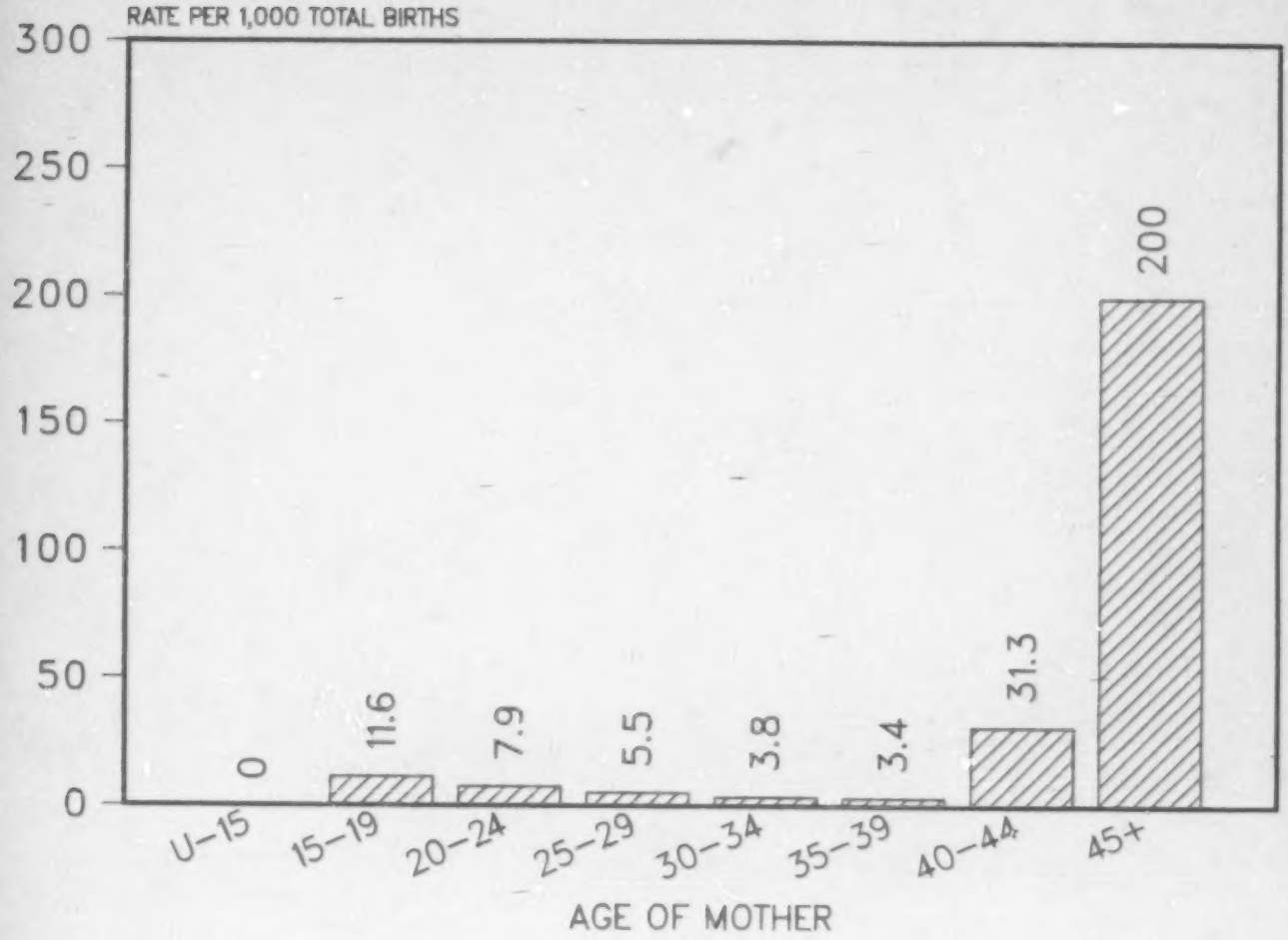
Age of Mother and Race of Fetus

The overall fetal death rate per 1,000 total births (live births plus fetal deaths) was 6.4 in 1988. The rates associated with white, Native American, and other races fetuses were 6.2, 9.7, and 0.0, respectively. Fetal death rates displayed somewhat of a parabolic relationship with respect to mother's age. Associated rates were generally higher with younger and older age females. Table 2.23 and Figure 2.25 depicts this relationship.

Table 2.23
Resident Fetal Deaths and Fetal Death Rates
by Age of Mother and Race of Fetus
North Dakota, 1988

Age of Mother	Race of Fetus							
	All Races		White		Native American		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Under 15 Years	--	--	--	--	--	--	--	--
15-19 Years	9	11.6	6	10.9	3	14.6	--	--
20-24 Years	22	7.9	19	8.1	3	8.2	--	--
25-29 Years	21	5.5	18	5.2	3	10.3	--	--
30-34 Years	8	3.8	7	3.6	1	8.0	--	--
35-39 Years	2	3.4	2	3.7	--	--	--	--
40-44 Years	2	31.3	2	34.5	--	--	--	--
45 Years and Over	1	200.0	1	200.0	--	--	--	--
Total	65	6.4	55	6.2	10	9.7	0	0.0

Figure 2.25
Resident Fetal Death Rates by Age of Mother
North Dakota, 1988



Prenatal Care - Fetal Deaths

Of the 65 fetal deaths recorded in 1988, 23 (35.4 percent) of the records indicated that the mother had less than 5 prenatal visits (Tables 2.24 and 2.25 and Figures 2.26 and 2.27).

Table 2.24
Resident Fetal Deaths and Fetal Death Rates
by Number of Prenatal Visits and Race of Mother
North Dakota, 1988

Number of Prenatal Visits	Race of Mother							
	All Races		White		Native American		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
None	1	16.1	--	--	1	43.5	--	--
1-4	22	49.7	19	72.5	3	16.9	--	--
5-9	28	7.9	22	6.9	6	18.9	--	--
10-14	9	1.7	9	1.9	--	--	--	--
15-19	2	3.0	2	3.3	--	--	--	--
20+	--	--	--	--	--	--	--	--
Not Stated	3	--	3	--	--	--	--	--
Total	65	6.4	55	6.0	10	11.3	0	0.0

Table 2.25
Resident Fetal Deaths and Fetal Death Rates
by Trimester Prenatal Care Began and Race of Mother
North Dakota, 1988

Trimester Prenatal Care Began	Race of Mother							
	All Races		White		Native American		Other	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
None	1	16.1	--	--	1	43.5	--	--
First	47	5.7	41	5.4	6	11.4	--	--
Second	11	7.3	8	6.4	3	12.9	--	--
Third	--	--	--	--	--	--	--	--
Not Stated	6	--	6	--	--	--	--	--
Total	65	6.4	55	6.0	10	11.3	0	0.0

Figure 2.26
Resident Fetal Death Rates by
Number of Prenatal Visits
North Dakota, 1988

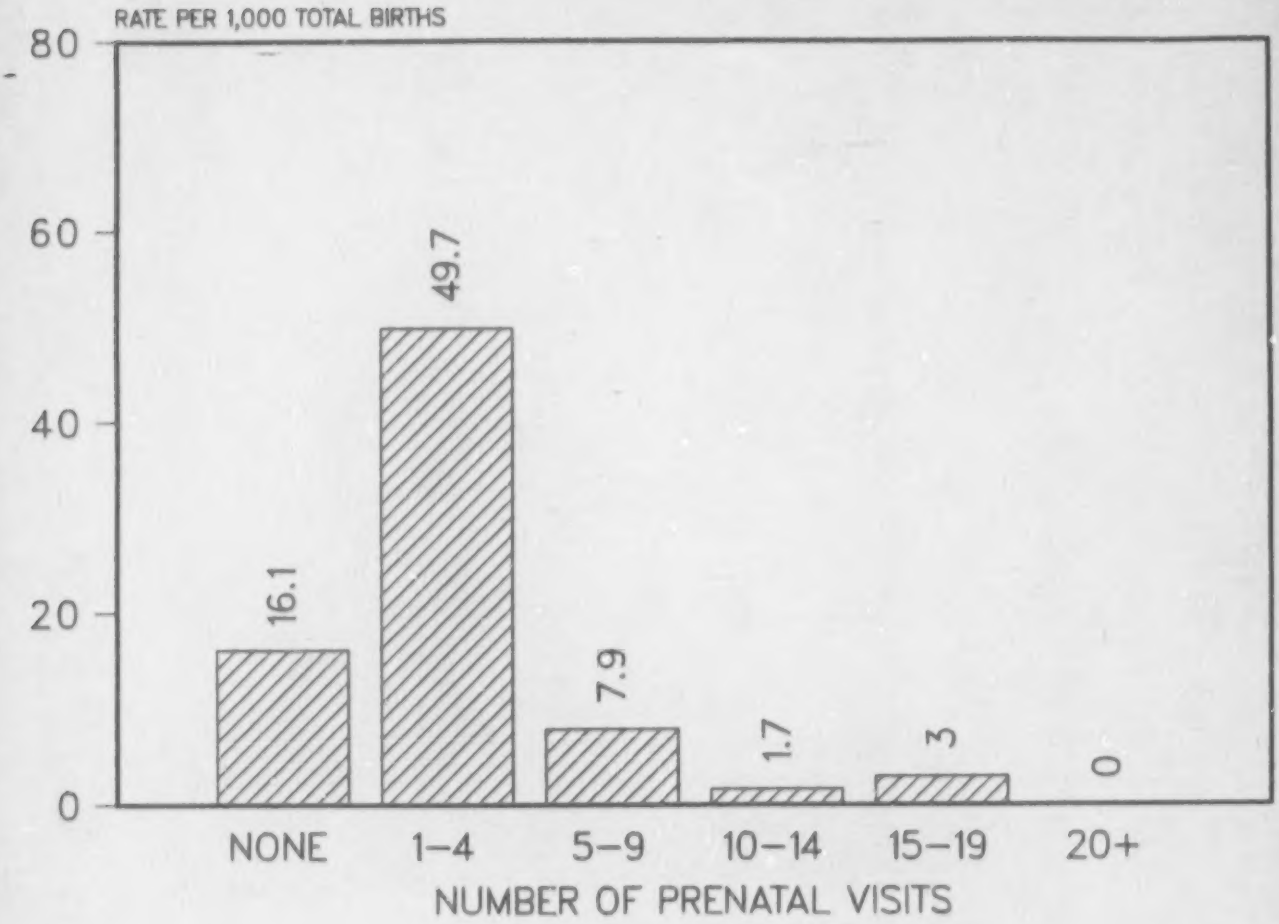
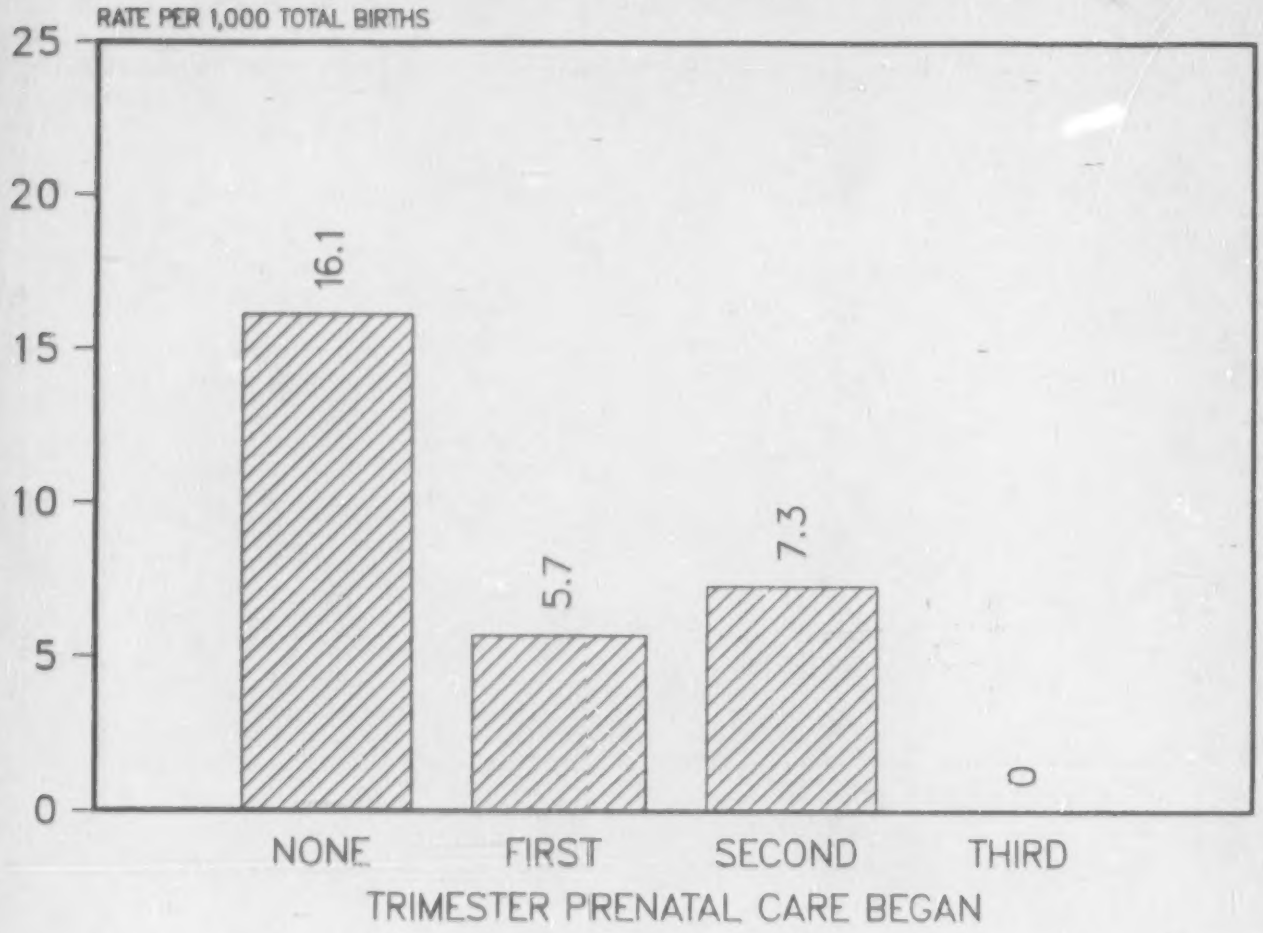


Figure 2.27
Resident Fetal Death Rates
by Trimester Prenatal Care Began
North Dakota, 1988



MARRIAGE and DIVORCE

Marriage and Divorce:
An Overview 1988

Total Marriages	4,966
Marriage Rate	7.4
Total Divorces and Annulments	2,365
Divorce Rate	3.5
Median Duration of Marriage at Divorce	7.4

Marriage and Divorce

The number of marriages and divorces occurring in North Dakota has generally increased since 1960. The smallest number of marriages during the 1960 to 1988 time period was 4,041 in 1960, while the largest number was 6,204 reported in 1981. The smallest and largest numbers of divorces and annulments were witnessed in 1960 (596) and 1988 (2,365), respectively (Figures 3.1 and 3.2 and Tables 3.1 and 3.2).

Figure 3.1
Marriages
North Dakota Occurrences
1960-1988

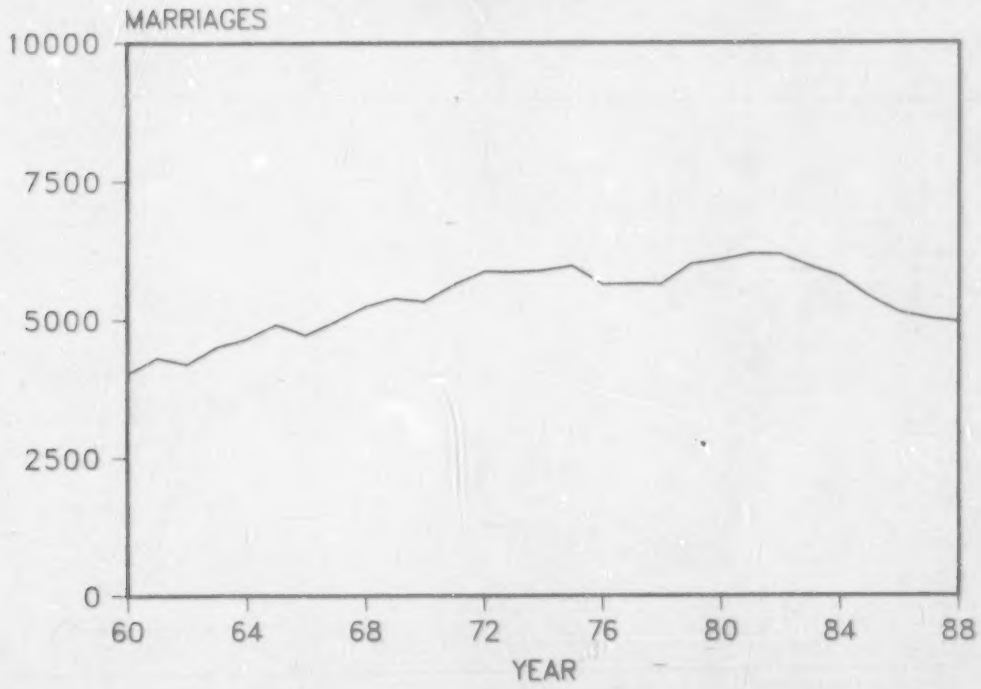


Figure 3.2
Divorces and Annulments
North Dakota Occurrences
1960-1988

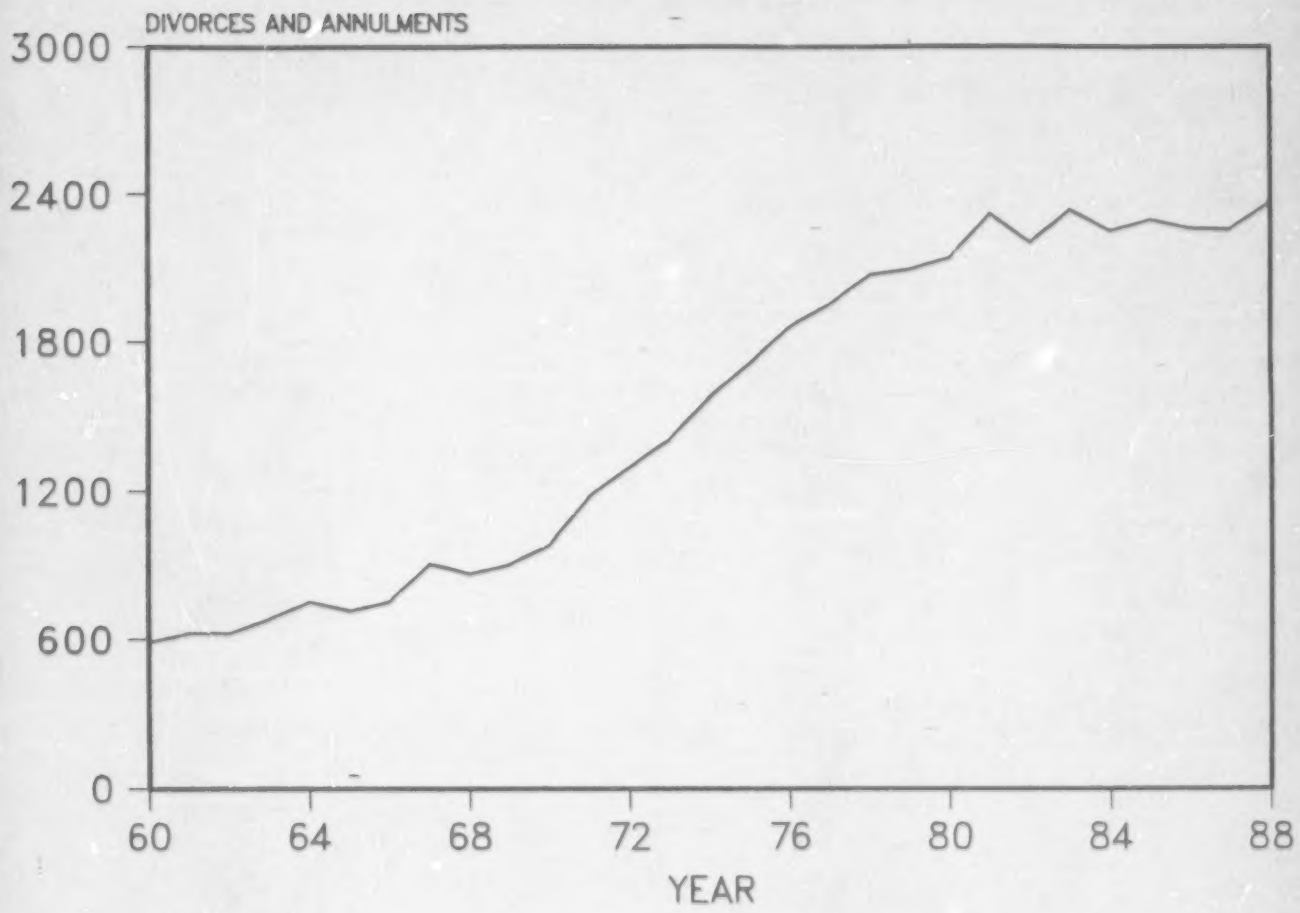


Table 3.1
Marriages and Marriage Rates
North Dakota and United States Occurrences
1960-1988

Year	United States		North Dakota	
	Number	Rate	Number	Rate
1960	1,523,000	8.5	4,041	6.4
1961	1,548,000	8.4	4,335	6.8
1962	1,577,000	8.5	4,212	6.6
1963	1,654,000	8.8	4,531	7.0
1964	1,725,000	9.0	4,675	7.2
1965	1,800,000	9.3	4,939	7.6
1966	1,857,000	9.5	4,740	7.3
1967	1,927,000	9.7	4,990	7.9
1968	2,069,000	10.4	5,251	8.4
1969	2,145,000	10.6	5,399	8.8
1970	2,158,802	10.5	5,340	8.6
1971	2,190,481	10.5	5,648	9.0
1972	2,282,154	10.9	5,886	9.3
1973	2,284,108	10.8	5,874	9.3
1974	2,229,667	10.4	5,905	9.3
1975	2,152,662	10.0	5,993	9.4
1976	2,154,807	9.9	5,649	8.7
1977	2,178,367	9.9	5,668	8.7
1978	2,282,272	10.3	5,651	8.7
1979	2,331,337	10.4	6,022	9.2
1980	2,390,252	10.5	6,093	9.3
1981	2,422,145	10.5	6,204	9.4
1982	2,456,278	10.6	6,195	9.2
1983	2,445,604	10.5	5,976	8.8
1984	2,477,192	10.6	5,796	8.4
1985	2,412,625	10.1	5,424	7.9
1986	2,407,099	10.0	5,148	7.6
1987	2,421,000(1)	10.0	5,028	7.5
1988	2,389,000(1)	9.7	4,966	7.4

(1) U.S. Estimate

Table 3.2
Divorces and Annulments
and Divorce and Annulment Rates
North Dakota and United States
1960-1988

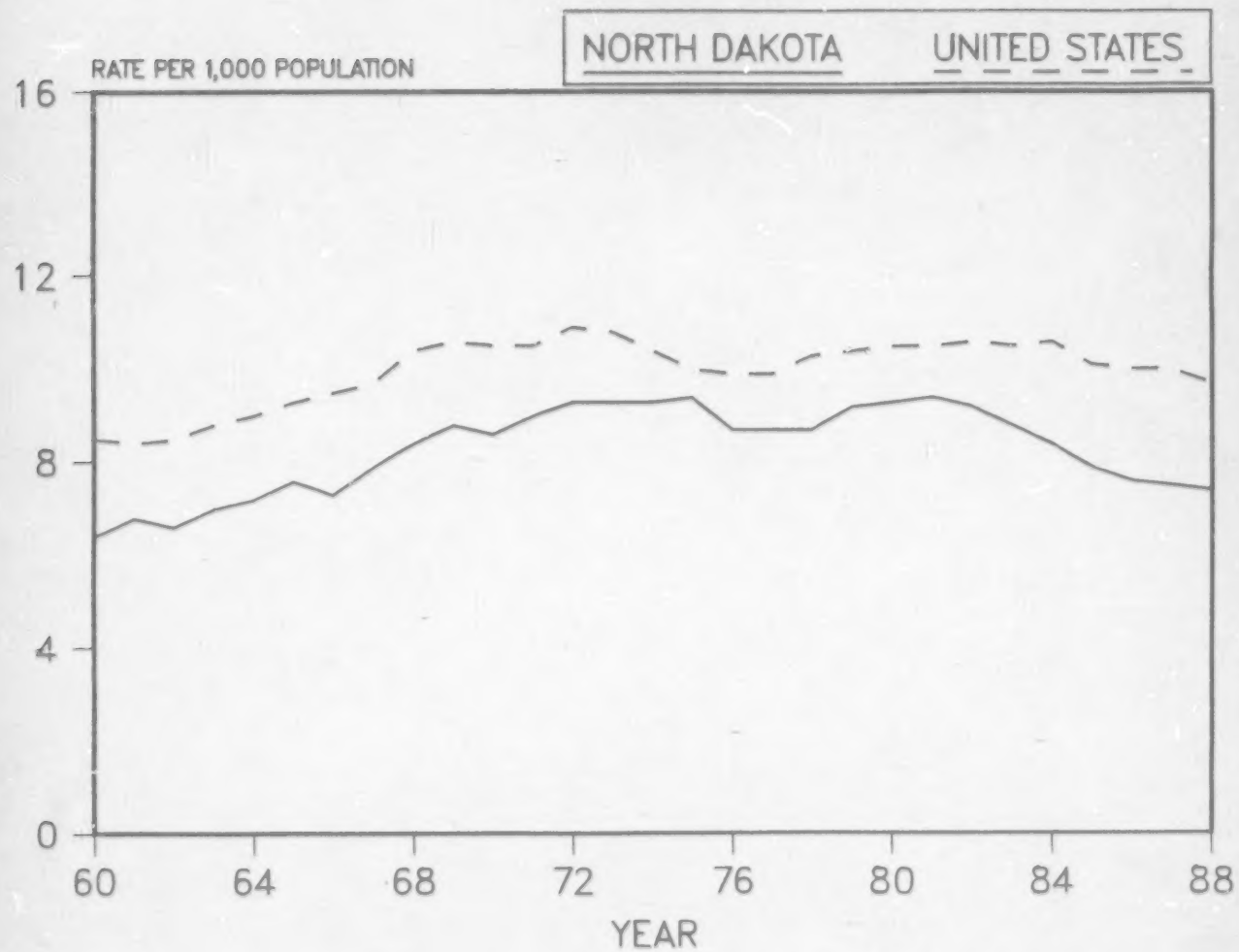
Year	United States		North Dakota	
	Number	Rate	Number	Rate
1960	393,000	2.2	596	0.9
1961	414,000	2.3	633	1.0
1962	413,000	2.2	631	1.0
1963	428,000	2.3	689	1.1
1964	450,000	2.4	758	1.2
1965	479,000	2.5	720	1.1
1966	499,000	2.5	759	1.2
1967	523,000	2.6	909	1.4
1968	584,000	2.9	868	1.4
1969	639,000	3.2	908	1.5
1970	708,000	3.5	985	1.6
1971	773,000	3.7	1,181	1.9
1972	845,000	4.0	1,298	2.1
1973	915,000	4.3	1,409	2.2
1974	977,000	4.6	1,578	2.5
1975	1,036,000	4.8	1,714	2.7
1976	1,083,000	5.0	1,861	2.9
1977	1,091,000	5.0	1,952	3.0
1978	1,130,000	5.1	2,071	3.2
1979	1,181,000	5.2	2,095	3.2
1980	1,189,000	5.2	2,142	3.3
1981	1,213,000	5.3	2,319	3.5
1982	1,170,000	5.0	2,202	3.3
1983	1,158,000	4.9	2,336	3.4
1984	1,169,000	5.0	2,249	3.3
1985	1,190,000	5.0	2,295	3.4
1986	1,178,000	4.9	2,261	3.3
1987	1,157,000(1)	4.8	2,256	3.4
1988	1,183,000(1)	4.8	2,365	3.5

(1) U.S. Estimate

Marriage

Since 1960 there have been noticeable shifts in marriage rates nationally and in North Dakota (Figure 3.3). The marriage rates observed for this state have generally followed the pattern of rising and falling rates observed nationally. The number of persons married each year per 1,000 population was higher nationally than in the state for each reporting time period, i.e., 1960-1988. The highest marriage rate reported in North Dakota was 9.4 in 1975 and 1981, while the lowest was 6.4 in 1960.

Figure 3.3
Marriage Rates
North Dakota and United States Occurrences
1960-1988



Age at Marriage

Examination of Table 3.3 indicates that during 1988 females married at younger ages than did males. More than three and one-half times the number of females married under the age of 20, compared to their male counterparts, while in the 25 and older age groups males married more frequently than females. The median age for brides in 1988 was 25, while the median for grooms was 27.

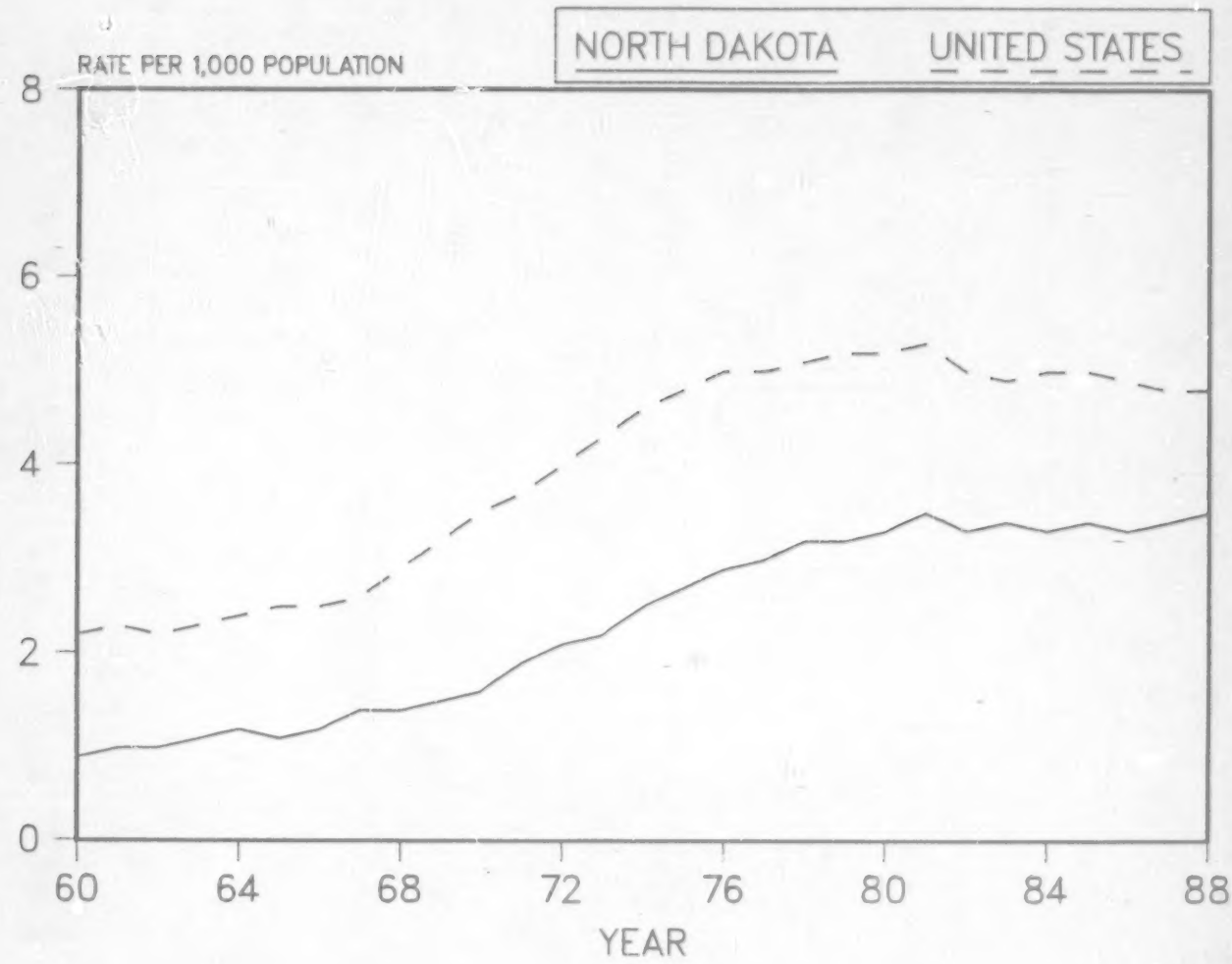
Table 3.3
Marriages by Age and Sex
North Dakota Occurrences
1988

Ages	Number of Marriages	
	Males	Females
Under 20 Years	161	606
20-24 Years	1,797	2,020
25-29 Years	1,437	1,151
30-39 Years	1,033	781
40-49 Years	288	231
50-59 Years	108	87
60-69 Years	94	57
70 Years and Over	48	33
Total	4,966	4,966
Median Age	27	25

Divorce and Annulment

During the 1960-1988 time period North Dakota and United States divorce and annulment rates followed a similar pattern, one of significant growth (Figure 3.4). Although the pattern has been nearly identical, nationwide rates have been consistently higher than corresponding state divorce and annulment rates. Since 1960 the lowest divorce and annulment rate was reported in 1960 (0.9), while the highest similar state rate was in 1981 and 1988 (3.5).

Figure 3.4
Divorce and Annulment Rates
North Dakota and United States Occurrences
1960-1988



Duration of Marriage at Divorce

The median duration of marriage at divorce was 7.4 years in 1988. The largest percentage of divorces and annulments occurred in the 1-4 year cohort (Table 3.4).

Minor Children of Divorced Couples

The number of children under 18 affected by divorces in 1988 was 2,531 (Table 3.5), while the average number of children per divorce was 1.1.

Table 3.4
Divorces and Annulments by Duration of Marriage
North Dakota Occurrences
1988

Duration in Years	Frequency	Percent
Under 1 Year	71	3.0
1-4 Years	798	33.7
5-9 Years	664	28.1
10-14 Years	308	13.0
15-19 Years	225	9.5
20-24 Years	136	5.8
25-29 Years	85	3.6
30-34 Years	44	1.9
35-39 Years	19	0.8
40-49 Years	13	0.5
50 Years and Over	2	0.0
Total	2,365	100.0
Median Duration	7.4 Years	

Table 3.5
Divorces by Children Affected
North Dakota Occurrences
1988

Children Affected	Frequency	Percent
0	980	41.5
1	558	23.6
2	556	23.6
3	214	9.1
4	43	1.8
5 or More	9	0.4
Total Divorces	2,360	100.0
Total Children Affected	2,531	N/A

INDUCED TERMINATIONS

Induced Terminations of Pregnancy: An Overview 1988

Total Induced Terminations (Occurrences)	2,221
Total Induced Terminations (Residents)	1,242

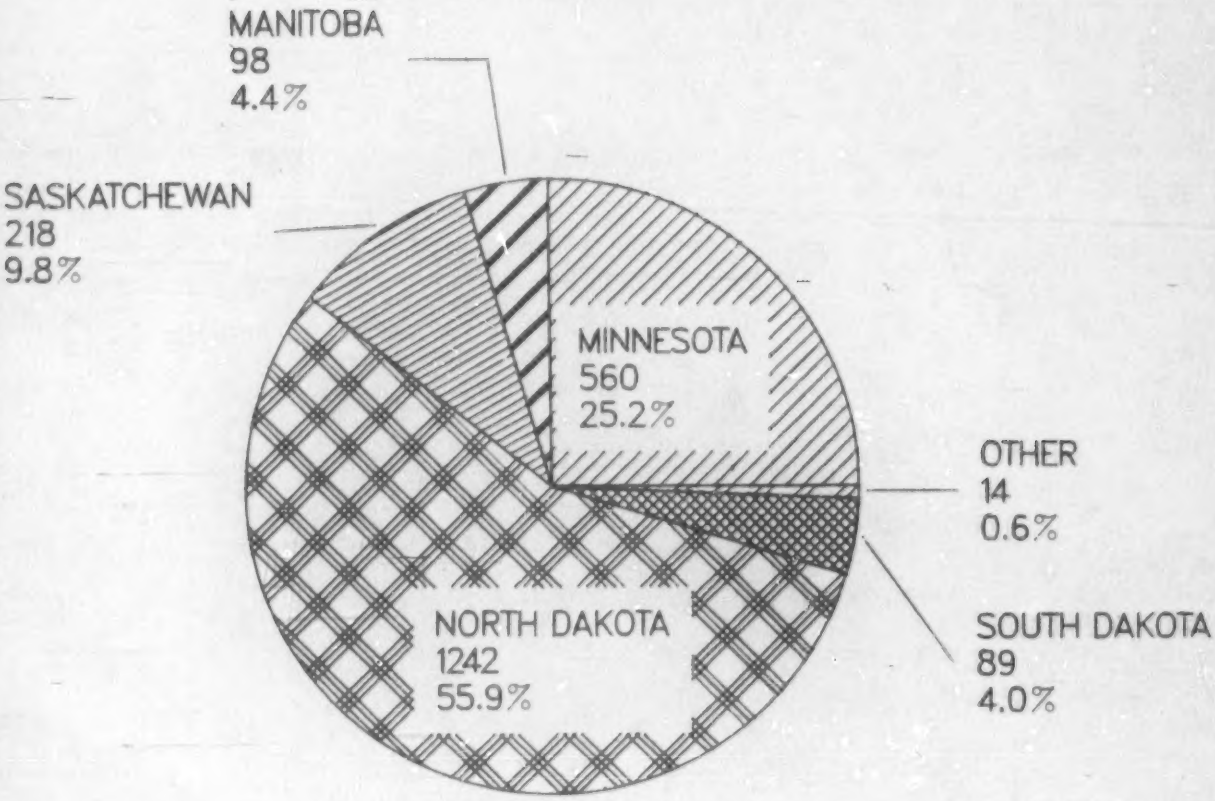
Induced Terminations

In 1988, 2,221 induced terminations were reported in North Dakota. Approximately 56 percent of these terminations were state residents (Table 4.1 and Figure 4.1). Of the nonresident induced terminations occurring in the state, nearly 80 percent were residents of Minnesota or the Province of Saskatchewan, Canada.

Table 4.1
Induced Termination Occurrences
by State of Residence
North Dakota, 1988

Geographic Area	Number	Percent
North Dakota	1,242	55.9
Minnesota	560	25.2
South Dakota	89	4.0
Manitoba	98	4.4
Saskatchewan	218	9.8
Other Areas	14	0.6
Total	2,221	100.0

Figure 4.1
Induced Termination Occurrences
by State of Residence
North Dakota, 1988



Age and Race of Female

In 1988, 34.6 percent of all resident induced terminations were to women ages 20-24, while 28.4 percent were women ages 15-19 (Table 4.2).

Other Social Characteristics

Tables 4.3 and 4.4 portray age of woman by marital status and education of woman, respectively. Approximately 85 percent of all North Dakota residents having induced terminations were not married at the time of the termination. Regarding education, 50.2 percent of the women were educated at the level grades 10-12, while 43.9 percent were educated within the level 1-4 years of college.

Table 4.2
Resident Induced Terminations
by Age and Race of Female
North Dakota, 1988

Age of Female	Total		White		Native American		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Under 15 Years	8	0.6	7	0.6	1	2.3	--	--
15-19 Years	353	28.4	335	28.6	13	30.2	5	18.5
20-24 Years	430	34.6	407	34.7	15	34.9	8	29.6
25-29 Years	249	20.1	238	20.3	7	16.3	4	14.8
30-34 Years	120	9.7	111	9.5	5	11.6	4	14.8
35-39 Years	67	5.4	59	5.0	2	4.7	6	22.2
40-44 Years	13	1.1	13	1.1	--	--	--	--
45 Years and Over	2	0.2	2	0.2	--	--	--	--
Total	1,242	100.0	1,172	100.0	43	100.0	27	100.0

Table 4.3
Resident Induced Terminations
by Age and Marital Status of Female
North Dakota, 1988

Age of Female	Total	Married	Not Married	Not Stated
Under 15 Years	8	--	8	--
15-19 Years	353	13	340	--
20-24 Years	430	43	386	1
25-29 Years	249	60	189	--
30-34 Years	120	41	79	--
35-39 Years	67	26	41	--
40-44 Years	13	6	7	--
45 Years and Over	2	1	1	--
Total	1,242	190	1,051	1

Table 4.4
Resident Induced Terminations by
Age and Education of Female
North Dakota, 1988

Age of Female	Total	Grades 1-9	Grades 10-12	1-4 Years of College	5+ Years of College	Not Stated
Under 15 Years	8	8	--	--	--	--
15-19 Years	353	14	252	84	--	3
20-24 Years	430	3	159	259	6	3
25-29 Years	249	2	118	116	10	3
30-34 Years	120	--	59	47	8	6
35-39 Years	67	--	29	32	5	1
40-44 Years	13	--	6	6	--	1
45 Years and Over	2	--	1	1	--	--
Total	1,242	27	624	545	29	17

Other General Characteristics

Of the induced terminations reported in North Dakota, suction curettage was the primary procedure utilized in all reported pregnancy terminations (Table 4.5).

Complications of termination were reported in 5 (0.4 percent) of the state's 1,242 resident induced terminations (Table 4.6).

Table 4.7 depicts resident induced terminations by age of woman and gestation period. The median gestation period for induced terminations was approximately 8 weeks.

Table 4.5
Resident Induced Terminations
by Age of Female and Primary Procedure
North Dakota, 1988

Age of Female	Total	Suction Curettage
Under 15 Years	8	8
15-19 Years	353	353
20-24 Years	430	430
25-29 Years	249	249
30-34 Years	120	120
35-39 Years	67	67
40-44 Years	13	13
45 Years and Over	2	2
Total	1,242	1,242

Table 4.6
Resident Induced Terminations by
Age of Female and Complications of Termination
North Dakota, 1988

Age of Female	Total	None	Hemorrhage	Infection	Retained Products	Other
Under 15 Years	8	8	--	--	--	--
15-19 Years	353	352	--	--	--	1
20-24 Years	430	430	--	--	--	--
25-29 Years	249	246	1	--	1	1
30-34 Years	120	119	--	1	--	--
35-39 Years	67	67	--	--	--	--
40-44 Years	13	13	--	--	--	--
45 Years and Over	2	2	--	--	--	--
Total	1,242	1,237	1	1	1	2

Table 4.7
Resident Induced Terminations by
Age of Female and Gestation Period
North Dakota, 1988

Age of Female	Gestation					
	Total	1-4 Weeks	5-8 Weeks	9-12 Weeks	13 Weeks and Over	Not Stated
Under 15 Years	8	--	5	2	1	--
15-19 Years	353	2	183	142	26	--
20-24 Years	430	4	269	132	25	--
25-29 Years	249	1	165	72	10	1
30-34 Years	120	1	86	29	4	--
35-39 Years	67	--	46	20	1	--
40-44 Years	13	--	7	6	--	--
45 Years and Over	2	1	1	--	--	--
Total	1,242	9	762	403	67	1

APPENDIX

Table 5.1
Live Births and Deaths, North Dakota Residents;
Marriages and Divorces,
North Dakota Occurrences, by County
1988

County	Births	Deaths	Marriages	Divorces
Adams	44	38	7	10
Barnes	174	153	92	50
Benson	181	85	35	3
Billings	17	5	3	0
Bottineau	107	117	46	18
Bowman	49	52	43	9
Burke	29	48	11	5
Burleigh	870	386	506	281
Cass	1,494	650	890	391
Cavalier	83	81	43	19
Dickey	72	77	46	16
Divide	36	22	10	4
Dunn	63	35	17	8
Eddy	36	63	30	4
Emmons	58	67	38	4
Foster	59	65	36	4
Golden Valley	27	16	20	3
Grand Forks	1,304	418	659	367
Grant	43	28	17	2
Griggs	46	42	21	4
Hettinger	60	40	17	6
Kidder	39	26	20	3
LaMoure	65	68	28	4
Logan	29	18	12	4
McHenry	76	89	35	12
McIntosh	51	78	10	5
McKenzie	135	42	29	16
McLean	136	110	51	28
Mercer	173	87	70	31
Morton	407	219	190	75
Mountrail	102	97	36	28
Nelson	52	64	17	11
Oliver	38	18	9	5
Pembina	125	131	57	32
Pierce	71	66	39	20
Ramsey	190	154	96	47
Ransom	73	76	45	14
Renville	32	35	10	2
Richland	246	188	116	44
Rolette	343	112	52	3
Sargent	62	40	29	4
Sheridan	19	30	12	1
Sioux	97	35	31	0
Slope	11	6	7	0
Stark	372	169	191	94
Steele	34	29	13	6
Stutsman	318	211	170	98
Towner	52	51	14	10
Traill	115	107	64	33
Walsh	212	182	96	57
Ward	1,149	387	606	345
Wells	79	78	44	13
Williams	356	173	170	107
Total	10,111	5,664	4,966	2,360

Table 5.2
Resident Deaths by Age, Gender, and Selected Causes
North Dakota, 1988

Primary Cause of Death	Age at Death																			
	Under 1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65+		All Ages	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Tuberculosis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	1	--
Septicemia	--	--	--	1	--	--	--	--	--	--	2	--	1	1	--	--	17	12	20	14
Viral Hepatitis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	3	1	3
All Other Infectious and Parasitic Diseases	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	5	7	5	9
Malignant Neoplasms	1	--	1	--	4	1	4	2	7	3	11	18	51	36	121	102	529	406	729	568
Benign Neoplasms	--	--	--	--	--	--	--	--	--	--	--	--	1	--	2	1	6	15	9	16
Diabetes	--	--	--	--	--	--	--	--	1	--	4	--	4	2	4	8	48	47	61	57
Nutritional Deficiencies	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	4	2	4
Anemias	--	--	--	--	--	1	--	--	--	--	--	--	--	--	1	--	5	3	6	4
Meningitis	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
Heart Disease	3	2	--	1	--	--	4	--	5	1	21	2	46	10	130	51	898	886	1107	953
Hypertension With or Without Renal Disease	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1	1	15	11	17	12
Cerebrovascular Disease	--	1	1	--	--	--	--	--	1	--	1	3	2	4	7	6	141	262	153	276
Atherosclerosis	--	--	--	--	--	--	--	--	--	--	--	--	2	--	2	--	41	56	45	56
Other Arterial Disease	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	3	32	29	35	32
Acute Bronchitis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1
Influenza and Pneumonia	2	--	1	1	--	--	--	1	1	--	1	--	1	2	3	3	94	97	103	104
Chronic Obstructive Pulmonary Disease	--	--	1	--	--	--	--	--	--	--	--	1	1	3	10	9	145	39	157	52
Ulcer	--	--	--	--	--	--	--	--	--	--	--	--	--	1	2	--	9	8	11	9
Appendicitis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1	--	2	--
Hernia	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	1	9	2	9
Cirrhosis	--	--	--	--	--	--	--	--	--	1	3	4	9	4	6	5	18	8	36	22
Cholelithiasis	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	6	5	6	6
Nephritis and Nephrosis	--	--	--	--	--	--	--	--	1	--	--	--	--	1	--	--	32	22	33	23
Kidney Infection	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	2	2	2
Prostate Hyperplasia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--	2	--
Congenital Anomalies	19	12	3	--	--	1	1	2	2	--	1	1	--	1	1	1	2	1	29	19
Perinatal Conditions	22	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22	10
Ill-Defined Conditions	18	5	1	--	--	--	--	--	--	--	--	--	--	--	1	--	15	22	35	27
All Other Diseases	5	1	2	--	1	2	3	2	5	1	1	5	9	3	19	5	166	167	211	186
Traffic Accidents	--	1	2	2	6	3	33	11	14	4	9	2	7	--	3	--	18	9	92	32
All Other Accidents	1	2	3	1	--	1	7	3	10	5	5	2	7	1	8	1	39	31	80	47
Suicide	--	--	--	--	1	2	12	5	10	2	12	3	6	2	6	--	13	1	60	15
Homicide/Legal Intervention	1	--	--	--	--	--	4	1	2	--	3	2	--	--	1	--	--	--	11	3
All Other External Causes	--	--	--	--	--	--	2	1	2	1	--	--	--	--	--	--	--	1	4	3
All Causes of Death	73	34	15	6	12	11	70	28	62	18	74	43	148	72	333	198	2303	2164	3090	2574

Table 5.3
Resident Selected Causes of Death, by County
North Dakota Residents, 1988

County	All Causes	Residual	Malignant Neoplasms	Diabetes	Diseases of the Heart	Cerebro-vascular Disease	Athero-sclerosis	Other Diseases of Arteries	Influenza/ Pneumonia	COPD	Accidental	Suicide
Adams	38	8	8	1	13	1	0	0	4	2	1	0
Barnes	153	22	30	6	47	18	3	2	8	3	12	2
Benson	85	16	19	4	22	7	0	0	2	2	9	4
Billings	5	0	3	0	2	0	0	0	0	0	0	0
Bottineau	117	22	27	0	37	17	0	1	6	3	3	1
Bowman	52	10	10	2	18	3	2	1	0	5	1	0
Burke	48	7	16	0	15	3	1	0	2	2	2	0
Burleigh	386	57	84	7	126	37	21	4	16	12	12	10
Cass	650	95	173	12	229	44	6	9	29	28	16	9
Cavalier	81	8	19	0	30	7	2	2	2	6	5	0
Dickey	77	5	12	1	35	10	0	1	8	3	2	0
Divide	22	6	3	0	9	0	0	0	2	1	1	0
Dunn	35	5	8	0	14	0	1	1	2	1	3	0
Eddy	63	6	19	1	22	5	0	1	1	3	5	0
Emmons	67	5	12	4	28	8	1	1	3	3	0	2
Foster	65	10	16	4	11	14	4	1	3	1	1	0
Golden Valley	16	1	2	0	9	0	1	0	0	2	1	0
Grand Forks	418	64	90	6	173	25	6	5	13	16	15	5
Grant	28	0	4	1	15	1	0	1	0	2	4	0
Griggs	42	5	13	1	13	2	0	0	2	2	3	1
Hettinger	40	8	10	0	15	2	0	0	2	4	0	1
Kidder	26	3	6	1	8	1	1	0	2	2	2	0
LaMoure	68	11	15	1	27	5	0	1	3	1	3	1
Logan	18	3	6	0	8	0	0	0	0	0	0	1
McHenry	89	9	29	3	32	4	1	2	4	1	3	1
McIntosh	78	9	11	3	38	8	1	0	2	3	2	1
McKenzie	42	4	13	2	14	3	0	0	2	1	3	1
McLean	110	12	31	2	45	6	3	2	0	5	4	0
Mercer	87	16	15	2	28	4	5	1	1	2	9	4
Morton	219	28	51	4	81	16	5	4	9	5	13	3
Mountrail	97	15	27	6	32	4	0	3	2	4	3	1
Nelson	64	8	10	2	29	5	0	1	5	2	2	0
Oliver	18	4	4	1	5	1	0	0	1	1	2	0
Pembina	131	15	30	3	46	19	6	0	1	4	6	1
Pierce	66	11	18	0	22	2	2	2	1	6	2	0
Ramsey	154	26	32	1	60	13	0	0	7	6	7	2
Ransom	76	12	15	2	34	7	0	2	0	3	1	0
Renville	35	6	9	0	16	2	0	0	1	0	0	1
Richland	188	33	44	3	64	11	2	2	16	7	6	0
Rolette	112	24	20	2	46	6	0	0	2	0	10	2
Sargent	40	7	8	0	16	2	3	0	2	2	0	0
Sheridan	30	2	7	2	16	2	0	0	0	0	1	0
Sioux	35	7	6	3	10	2	0	0	0	0	6	1
Slope	6	0	1	0	3	0	1	0	0	0	0	1
Stark	169	24	35	2	70	9	2	6	7	6	7	1
Steele	29	5	8	0	7	1	0	0	2	2	3	1
Stutsman	211	40	49	3	68	18	6	2	2	7	11	5
Towner	51	4	11	0	23	4	0	0	5	1	2	1
Traill	107	7	21	2	42	11	5	3	6	7	3	0
Walsh	182	35	33	2	64	19	3	1	8	6	9	2
Ward	387	73	103	7	127	24	3	3	7	13	19	8
Wells	78	6	16	5	36	3	2	1	2	2	4	1
Williams	173	31	35	4	60	13	2	1	5	9	12	1
Total	5664	850	1297	118	2060	429	101	67	207	209	251	75